

RAILWAY AGE

One of Five Simmons-Boardman Railway Publications

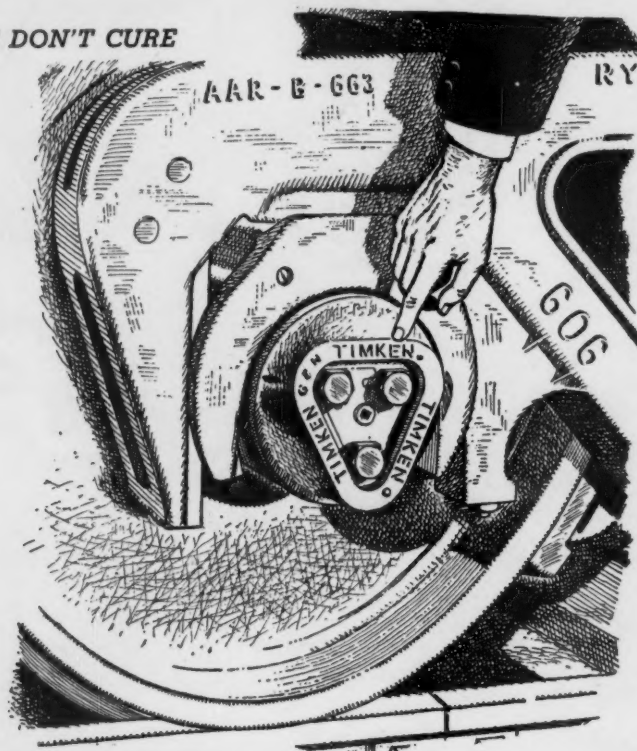
"CRUTCHES"



COST MONEY, BUT DON'T CURE

Here's the only real Cure to the Hot Box Problem

*...and TIMKEN® bearings pay
for themselves over
and over and over in operating
and maintenance savings*



THERE'S only one way to *cure* the hot box problem. That's to eliminate its cause. Unlike costly devices which merely serve as "crutches" in an attempt to improve friction bearing performance, Timken® tapered roller bearings eliminate the *cause* of hot boxes—the friction bearing itself.

BIG ADDED SAVINGS

In addition, Timken bearings drastically reduce the costs of bearing inspection and lubrication. Railroads must still face these costs even when they "doctor" friction bearings with crutch devices. With Timken bearings, terminal bearing inspection time is cut 90%, lubricant costs are reduced as much as 89%. In fact, the Timken heavy-duty type AP (All-Purpose) bearing assembly can go for three years without adding lubricant. When the day comes that all railroads go "Roller Freight", they'll save more than \$190 million a year, earn an estimated 22% net annual return on the investment.

Timken bearings do away with hot boxes because they roll the load instead of sliding it. Metal-to-metal sliding friction is eliminated. And the tapered design makes Timken the only roller bearing you can *count on* to not only *cure* the hot box problem but also to reduce maintenance and operating costs to a minimum. The taper in Timken bearings prevents lateral movement. Result: there's no pumping action—less lubricant is needed; there's no scuffing or skewing—bearings last longer.

To insure bearing quality every step of the way, we make our own steel. We're America's only bearing manufacturer that does. And we make it nickel-rich for superior toughness.

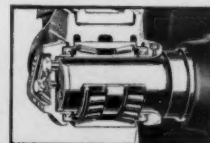
NEW CONVERSION PLAN

When you consider the added cost of buying and maintaining "crutch" devices for friction bearings, the price gap between friction and roller bear-

ings is smaller today than ever. Now, a practice adopted by one major American railroad promises to shrink it even more. This railroad has in effect a practical program for converting to "Roller Freight". Here's how it works. Every freight car coming into the shops for major repairs is being converted to roller bearings. This permits a steady shop and labor schedule and allows the railroad to pay for its conversion to roller bearings over a period of years.

So, instead of "making do" with unsatisfactory friction bearings and costly "crutches", invest to *solve* your journal bearing problems. Make sure you *cure* the hot box problem and bring your operating and maintenance costs down to rock bottom. Get Timken tapered roller bearings. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

Only **TIMKEN®** bearings cure the hot box problem and cut operating and maintenance costs to a minimum





Proof once more... at Buffalo-Unit

"Progress is our principal product"

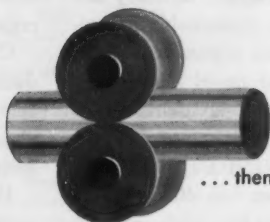
BUFFALO BRAKE BEAM CO. • UNIT TRUCK CORPORATION

Better? Yes!

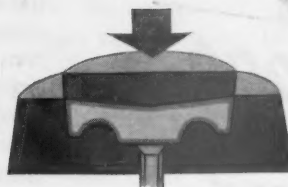
Here's Why:



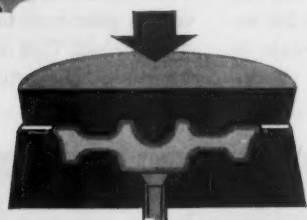
First
the
steel
is cast



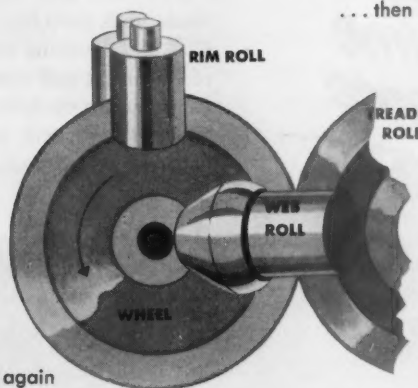
... then rolled



... then forged



... then forged again



... and rolled again

Let's go behind the scenes and examine some of the steps in the making of Bethlehem wrought-steel railway wheels. It is these steps, individually and collectively, that explain why wrought-steel wheels are superior for heavy-duty service.

First of all, Bethlehem wheels are made from steel specifically melted to meet every standard of AAR specifications. The steel is cast into ingots. Then begin the various stages of "working"—a fundamental that directly contributes to strength and long life.

This "working" consists of four

stages. To begin with, the cast-steel ingot is rolled into round blooms. The blooms are then sliced, and the round blocks receive two forgings in high-capacity presses; they have now become wheel blanks. After the second forging, the blanks are placed in a mill and further worked as tread, rim, and web are thoroughly rolled. Each of these steps helps to improve the properties of the finished wheel.

These are some of the reasons why Bethlehem wrought-steel wheels have stood the test of time. Railroads all over the country have adopted them for un-

limited application and interchange. For many years Bethlehem has been making AAR-approved railway wheels; for freight cars alone we have furnished more than 2,000,000. This total is constantly growing, together with the large numbers supplied for passenger and diesel service.

Could there be any better evidence of quality—of conscientious workmanship?

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM WROUGHT-STEEL WHEELS

COMPANIONS TO BETHLEHEM FORGED-STEEL AXLES

FREIGHT • PASSENGER • DIESEL



Why not use C.T.C. to cut operating expenses?

**\$84,000
saved by
reduced
overtime
payments**

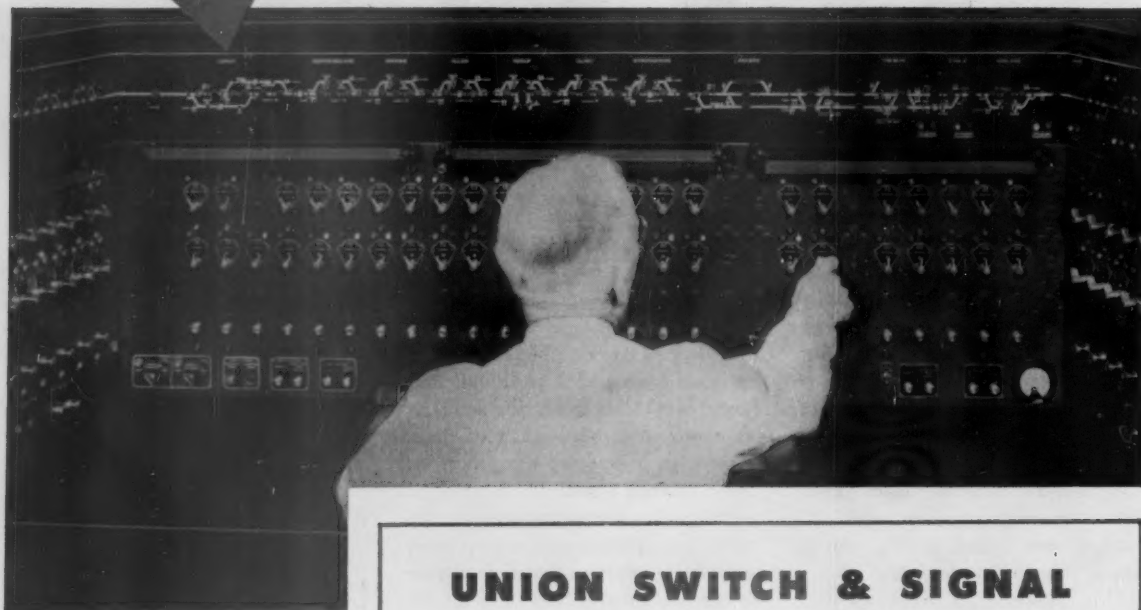
Railroads with long stretches of centralized traffic control territory are obtaining some remarkable reductions in operating expenses. For example, one road saved \$84,000 by reduced overtime payments alone on one division during the first year's operation with UNION C. T. C.

This road now has 466 miles of single-track main line equipped with C. T. C. . . . making possible a saving of five hours and more for through freight trains operating over the entire territory. And the increase in capacity of existing tracks elimin-

ated traffic bottlenecks which otherwise would have necessitated the construction of a second main track.

C. T. C. has also substantially reduced operating costs since just three sets of dispatchers are required for directing train movements over the territory by signal indication.

UNION C. T. C. pays for itself quickly through reductions in operating expenses. Why not let our traffic control engineers make a survey on your road to determine possible savings. Call our nearest office. There's no obligation.



UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

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RAILWAY AGE

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FORUM: TOFC standards and equipment are still in the experimental stage, and that means there's practically no limit to what management ingenuity can do to develop the potentialities of this burgeoning branch of railroad service. . . . 35

A look at TOFC service today shows there are big problems still unsolved. Among them are lack of equipment standardization, rates, trailer per diem, mechanics of interchange, and how far to go in bidding for common carrier trailer business. . . . 37

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"Piggyback": Who? Where? How? This issue includes a detailed road-by-road report of what these 34 railroads are doing to keep the TOFC boom flourishing, and what additional services they plan. . . . 39

Private trucks are handled, too, by some railroads, one difference from the usual piggyback service being that the shipper loads and unloads the trailers. . . . 52

A van-size container is the Missouri Pacific's answer to shipper demand for a flexible less-than-carload unit adaptable to rail or road movement. . . . 53



Keeping Wheels Turning Cuts RE-Turning!

Turning Wheels are *earning* wheels. When they're rolling on the track, they're playing their part in paying a return on the money invested in the equipment. When they're being RE-turned, it's a costly, time-consuming operation.


There's a practical way to keep wheels off the lathes and *on* the tracks . . . with the Westinghouse AP Mechanical-Pneumatic Decelostat® Controller. At the first

hint of a slip, the Decelostat Controller momentarily relieves braking pressure . . . permitting wheels to regain train speed . . . then, braking pressure is immediately built up to train level.

Because braking pressure is relieved the instant wheel slip *starts* . . . the slip is arrested *before it can* develop into a *slide* . . . and you save the cost of many flat wheels.

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PNEUMATIC
Decelostat®
Controller

Westinghouse Air Brake
COMPANY

AIR BRAKE DIVISION  WILMERDING, PENNA.

Current Statistics

Operating revenues, nine months	
1955	\$7,466,585,309
1954	6,975,961,026
Operating expenses, nine months	
1955	\$5,623,065,835
1954	5,546,999,420
Taxes nine months	
1955	\$ 820,244,988
1954	658,306,529
Net railway operating income, nine months	
1955	\$ 836,311,641
1954	580,921,059
Net income, estimated, nine months	
1955	\$ 661,000,000
1954	408,000,000
Average price railroad stocks	
November 29, 1955	99.96
November 30, 1954	78.52
Carloadings revenue freight	
Forty-six weeks, 1955	33,789,808
Forty-six weeks, 1954	30,283,665
Average daily freight car surplus	
Wk. ended Nov. 26, 1955	5,174
Wk. ended Nov. 27, 1954	32,008
Average daily freight car shortage	
Wk. ended Nov. 26, 1955	10,751
Wk. ended Nov. 27, 1954	960
Freight cars on order	
November 1, 1955	61,954
November 1, 1954	12,853
Freight cars delivered	
Ten months, 1955	29,710
Ten months, 1954	32,083
Average number of railroad employees	
Mid-October 1955	1,087,247
Mid-October 1954	1,055,145

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Why terminal costs are high is a disturbing question when TOFC operations are under scrutiny. Largely to blame are tractor-driver wages and switching expense, and ways to reduce these costs are actively being sought.

... 54

For faster freight handling at Florence, S.C., the ACL has put up a new station specially designed for mechanized operations.

... 56

Twin diesels for New Haven Talgo-type train are being built by Fairbanks-Morse so trains can operate from Boston into Grand Central Terminal without change of locomotive, and without turnarounds.

... 60

8,500-hp gas-turbine locomotives have been ordered by the Union Pacific—15 now, and 30 more in the offing—as a result of that road's experience with 25 4,500-hp turbines in service.

... 64

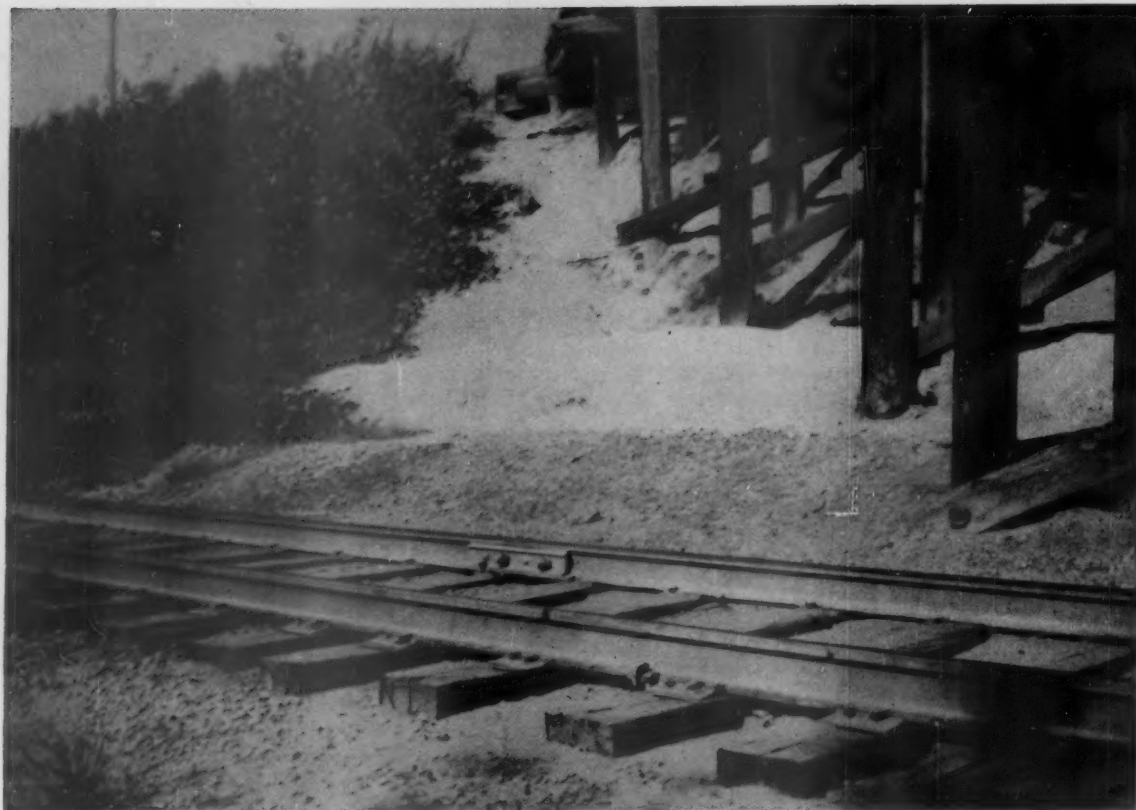
BRIEFS

A remotely controlled train was demonstrated in operation on the New Haven last week.

The mistaken belief seems to be getting around that a move is afoot to forbid the use of waste in any form in journal-box lubrication. Actually, the proposal has to do only with loose waste—not that used with devices which keep it in place in the journal box.

The Southern Pacific has won a citation for "adaptability and flexibility" from the American Institute of Management. This award is based on a management analysis which particularly praised that road's development of trucking facilities, its "piggyback" service, and its construction of a \$30-million pipeline paralleling its main line.

Another diesel type for export will be available next year if a major U. S. builder goes through with present plans to adapt its domestic design to other gauges.



Your best defense against weeds on tough terrain... **Concentrated BORASCU®**



© PCB CO.

Why have more roads chosen BORASCU Weed Killers than any other to end their weed hazards about timber structures, yards and sidings? Is it because of its safety and ease of application? True, the granular form makes hand-casting quick and easy wherever a man can walk. There is nothing to mix—no water to haul. It is nonpoisonous, nonflammable, and noncorrosive to ferrous metals.

But the initial low cost of BORASCU is important, too. Actually, *Concentrated BORASCU* furnishes a greater amount of plant-destroying ingredient than any other sodium borate herbicide—at lowest delivered cost—so the economy is great.

Yet we like to think BORASCU's popularity is due primarily to the dependable long-lasting results it so safely provides. For instance, the photo shows a weed-free condition after more than 18 months since being treated with *Concentrated BORASCU*!

Why don't *you* investigate this reliable weed-and-grass killer? Write today for descriptive literature. If after reading the details, you would like to see what *Concentrated BORASCU* can do, just say so. We'll arrange a demonstration for you on your road—under your conditions—without charge or obligation.

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Segregation Becomes Discrimination

ICC rules it unlawful and issues "cease and desist" orders effective January 10, 1956

The Interstate Commerce Commission has ruled that segregation of interstate railroad or bus passengers by race or color is unlawful.

Cease and desist orders were issued against 12 railroads, a rail terminal company, and a bus line which were involved in two separate complaint proceedings before the commission. They are to be effective on or before next January 10.

The rail proceeding was in Docket

No. 31423, National Association for the Advancement of Colored People et al. v. St. Louis-San Francisco Railway Company et al. The other was in Docket No. MC-C-1564, and was brought by Sarah Keys of New York against the Carolina Coach Company of Raleigh, N. C.

The commission found in the rail case that practices of assigning or directing Negro interstate passengers to coaches or portions of coaches

designated or provided for exclusive use of such passengers, and of maintaining waiting rooms in their stations designated for exclusive use of such passengers, "subject Negro passengers to undue and unreasonable prejudice and disadvantage, in violation of section 3(1) of the (Interstate Commerce) act."

"The disadvantage to a traveler who is assigned accommodations or facilities so designated as to imply his inherent inferiority solely because of his race must be regarded under present conditions as unreasonable," the commission stated. "Also, he is entitled to be free of annoyances, some petty and some substantial, which almost inevitably accompany segregation even though the rail carriers, as most of the defendants have done here, sincerely try to provide both races with equally convenient and comfortable cars and waiting rooms."

In effect, the commission discarded the separate-but-equal principle enunciated in former decisions, the first of which came two months after its organization in 1887. In that year, the commission ruled that disposition of the question "should aim at a result most likely to conduce to peace and order, and to preserve the self respect and dignity of citizenship of a common country."

Times Change — Declaring that present circumstances are far different from those in 1887, the commission stated:

"It is hardly open to question that much progress in improved race relations has been made since then and that more can be expected. If there were at present any serious reason for concern over 'peace and order,' the attorney general would hardly have asserted in his brief before us:

"Segregation in public transportation, that is, by common carriers under duty both at common law and by federal statute to serve all persons without discrimination, 'is not reasonably related to any proper governmental objective'.

"We are therefore now free to place greater emphasis on steps 'to preserve the self respect and dignity of citizenship of a common country' which this commission in 1887 balanced against 'peace and order'."

The commission ruled, however, that operation by a lessee (non-carrier) of separate lunch-room facilities for white and colored persons in the Broad Street station at Richmond, Va., constitutes a function or service which is not within its jurisdiction. Therefore, it dismissed the complaint as to the Union News Company.

Bus Case—In its decision in the bus case, the commission cited its findings in the rail case and concluded



"CONTROLLED COLD" with dry ice is being tested in piggyback service. The Chicago & Eastern Illinois recently used a trailer (above), on a successful run (30,000 lb of table sauces) between Chicago and St. Louis. The Liquid Carbonic Corporation, Chicago, has acquired two trailers for such demonstrations, one for use in the East, the other for Western roads. Advantages claimed for dry-ice cooling include minimum attention with no defrosting en route, plus elimination of "hot spots" along floor or side walls of trailer. Accurate control of temperature inside trailer is possible with either of two dry-ice units now on market. The C&E test run was made with the Hunter system, controls of which are shown in smaller photograph. Note dial thermometer at left. Dry ice is stored in bunker inside trailer, and three fans force cooled

air around lading. The Clifford system (Railway Age, May 9, page 21), utilizes a removable "pod" beneath trailer. Pressure from melting ice circulates a secondary refrigerant through coils in trailer.



that assignment of seats in interstate buses, "so designated as to imply the inherent inferiority of a traveler solely because of race or color must be regarded as subjecting the traveler to unjust discrimination, and undue and unreasonable prejudice and disadvantage."

The commission dismissed the complaint as to the Texas & Pacific because the record was devoid of evidence relating to the practices of this road in respect of interstate passengers. The remaining railroads concerned in the proceeding were: St. Louis-San Francisco; Louisville & Nashville; Atlantic Coast Line; Seaboard Air Line; Southern; Illinois Central; Gulf, Mobile & Ohio; Kansas City Southern; Missouri Pacific; Atchison, Topeka & Santa Fe; Gulf, Colorado & Santa Fe; Panhandle & Santa Fe; and Richmond Terminal.

Commissioner J. Monroe Johnson dissented in both proceedings. "It is my opinion," he stated, "that the commission should not undertake to anticipate the court and itself become a pioneer in the sociological field."

Commissioner Hutchinson did not participate in the disposition of either case, while Commissioner Mitchell did not participate in disposition of the bus proceeding.

Santa Fe Opposes Consolidation at Fresno

Fred G. Gurley, president of the Santa Fe, testified recently that expenditures required to consolidate operations with the Southern Pacific at Fresno, Cal., are "wholly without economic justification." The consolidation is sought by the city and county of Fresno. (*Railway Age*, July 27, 1953, page 16).

In testimony before an Interstate

Commerce Commission hearing at Fresno, Mr. Gurley submitted a Santa Fe plan which was described as less costly and "better" than consolidation. The Santa Fe plan would cost about \$5,224,000, while consolidation would cost \$30,000,000, it was said.

The plan calls for a shift of Santa Fe tracks from a public street to a new privately owned right-of-way and a grade crossing elimination program along the present route. A proposed union passenger terminal at Fresno would be an unproductive expenditure, Mr. Gurley said, in the face of declining rail passenger revenues.

Henry Calls Competition Heart of Cabinet Report

Key change in transport regulation proposed in the Cabinet Report, according to Robert S. Henry, vice-president, public relations, Association of American Railroads, is establishment of new standards for determining whether a rate is less than a reasonable minimum.

The Interstate Commerce Commission would retain its powers to disallow a rate if it were found to be below cost or to reject it if it were discriminatory, he told the National Grange at Cleveland November 21. But the ICC's determination could not involve the effect of the rate on any other mode of transportation, Mr. Henry went on, nor whether the rate were lower than necessary to meet the competition of another type of transportation.

"The heart of the report," the AAR vice-president declared, "lies in its recommendation for greater reliance on competition in the pricing of transportation services." It is not a proposal to abandon regulations, he said, and it is not "slanted for the rail-

roads." But the changes proposed, Mr. Henry said, "would make it perfectly clear that the commission is not expected to, and indeed would not be permitted to, undertake an artificial and arbitrary apportionment or distribution of traffic among several forms of transportation."

Train Fouling Track Caused Head-End Collision on NP

The Interstate Commerce Commission has found that the August 15 head-end collision on the Northern Pacific at Cheney, Wash., was caused "by a train fouling the main track on the time of an opposing superior train without adequate protection."

The accident resulted in death of one passenger and one train-service employee, and injury of 16 passengers, one railway mail clerk, one express messenger, and eight railroad employees.

Trains involved were a freight (Extra 5119 East) being moved from a siding on one side of the main track to an auxiliary track on the other side, and a westbound Spokane-Seattle passenger train (No. 5), consisting of a three-unit diesel-electric locomotive and eight cars. The third, a baggage car, and the seventh, a diner, were of steel-underframe construction; the others were all-steel.

The freight train, consisting of 17 cars and a caboose behind a steam locomotive of the 4-6-6-4 single-expansion, articulated type, was being moved in accordance with instructions from a dispatcher who advised that he wanted to use the siding for an eastbound passenger train. The engineer of the freight train understood that his train was to be moved before arrival of westbound No. 5, i.e., that he was supposed to clear the siding so the eastbound passenger train could use it to meet No. 5. And he thought movement of his train from the siding onto the main track and thence onto the storage track would be protected by the restrictive aspect of the signals governing No. 5.

The Collision—When the freight train was proceeding eastward through the siding switch, however, the engineer realized it would not clear between the switch and the signal governing No. 5's approach. He thereupon stopped the train and started a reverse movement, backing only about 10 to 20 ft before No. 5, diverted to the siding, ran into the front end of the steam locomotive. No equipment of the freight train was derailed, but the front end of the locomotive was "badly damaged," and the first car was "somewhat damaged." No. 5's diesel units and the front truck of its first car were derailed, and separations occurred between the seventh and eighth cars.

No. 5's engineer was the train-service employee killed, the control compartment having been torn from the first diesel unit's front end. State-



DAVID I. MACKIE, chairman of the Eastern Railroad Presidents Conference, prepares to open Cleveland's recent celebration of Railroad Day by ringing an old steam locomotive bell. Left to right are S. C. Phillips, assistant president, Brotherhood of Locomotive Firemen & Enginemen; Guy

Brown, grand chief engineer, Brotherhood of Locomotive Engineers; Walter J. Tuohy, president, Chesapeake & Ohio; Martin Miller, assistant to president, Brotherhood of Railroad Trainmen; Mr. Mackie; Felix S. Hales, president, Nickel Plate; and Paul W. Johnston, president, Erie.



SWEDISH STATE RAILWAYS employees from Stockholm recently visited this country on a combined business and pleasure tour. Shown at Pennsylvania Station, New York, are (left to right), Marianne Gustavsson; N. H. Whitley, assistant conductor on the New Haven; and Anne-Marie Wetterlind. Miss Gustavsson is dressed in a peasant costume from the province of Dalecarlia, and Miss Wetterlind wears a Lapp costume.

ments by members of the freight train's crew indicated the switches involved in that train's movement had been lined in time to give No. 5 an "approach" aspect at a signal 1.3 mi east of the point of collision; but surviving members of No. 5's crew said their train got a "proceed" there.

As to the next signal, 914 ft east of the point of collision but visible 1,405 ft before it is reached, the commission found both crews in agreement that it was displaying its most restrictive aspect which required that the speed of No. 5 be reduced immediately to 15 mph or less and that the train proceed at restricted speed. No. 5's speed was variously estimated at 35 to 45 mph at the time of the accident.

As to the freight train, the commission noted that NP rules require an inferior train to keep out of the way of opposing superior trains. If the inferior train fails to meet this requirement, it must be protected against superior trains, and these rules are not modified by rules governing movements in automatic block-signal territory. The rules also provide that, in automatic block-signal territory, a main track must not be fouled or entered until a three-minute period has elapsed after switches have been lined for the movement.

"In the instant case," the commission said, "the east-siding switch at Cheney was lined for movement to the main track and the main track was fouled by Extra 5119 East after No. 5 was due to leave Marshall [7.3 mi east of Cheney] and before adequate protection for the movement had been provided."

RAILWAY

MARKET *Outlook* THIS WEEK

New Equipment

FREIGHT CARS

► **Serviceable Fleet Gained 5,521 Cars.**—Class I railroads and car-line affiliates added 5,521 cars to their serviceable fleet in October, says Arthur Gass, chairman, Car Service Division, AAR, in latest review of "National Transportation Situation"; October rise, like September's, was due to stepped-up repair programs; bad-order ratio backlog was reduced by 6,177 cars, November 1's bad-order ratio—4.7%—being lowest since January 1949; October retirements exceeded installations, brought net loss of 656 cars in Class I ownership; Mr. Gass reported supply of all types of cars, except refrigerator and plain flat cars, was tight.

► **Performance Improves.**—Latest performance data, Mr. Gass's review said, shows August, with best record since November 1952, produced 1,041 net ton-miles per serviceable car per day, 18.4% better than August 1954 figure of 879.

► **Chicago, Milwaukee, St. Paul & Pacific.**—Ordered 100 covered hopper cars, Pullman-Standard; delivery early next year.

► **Kansas City Southern.**—Ordered 50 special flat cars from Piggy-Back, Inc.; cars will be built by Pullman-Standard.

► **Lehigh Valley.**—Ordered 200 covered hopper cars, Pullman-Standard, for delivery next May-June; and 100 65½-ft gondola cars, Bethlehem Steel, for delivery next June.

► **Norfolk & Western.**—Ordered 4,000 cars, costing \$30,000,000, from own shops; included are 3,500 70-ton coal hopper cars, 500 50-ton gondola cars.

► **Seaboard Air Line.**—Ordered 1,000 new cars costing \$7,685,000; Pullman-Standard will build 500 70-ton coal hopper cars; Bethlehem Steel, 300 70-ton wet rock phosphate cars; Magor Car, 200 70-ton high-side gondola cars; delivery expected to begin late in 1956.

Don't Miss These!

► **Fairbanks-Morse diesel locomotives**, to power the Talgo-type lightweight equipment being built for the New Haven by ACF Industries, are described in an illustrated story on page 60.

► **Union Pacific has ordered 15 more gas turbine-electric locomotives** from General Electric and has indicated its intent to buy 30 more. Cost of the 45 units would exceed \$38,000,000. The new locomotives would each have 8,500 hp, compared with the 4,500 hp per locomotive of the UP's present fleet of 25 gas turbine-electrics. An illustrated article about the new units starts on page 64.

(Continued on next page)

RAILWAYS IN THE MARKET—THIS WEEK

CONTINUED

New Facilities

► **Chicago Union Station.**—Modernization of mail handling facilities will cost an estimated \$2,000,000; project includes construction of large platform with adjacent trackage to accommodate minimum of 17 cars; necessary signaling and interlocking; a mail conveyor system is being installed; work has begun, and several phases of project are near completion.

► **Norfolk & Western.**—Applied for ICC authority to construct 6-mile line out of Carbo in Russell County, Va., to serve coal mines.

Special

► **Thailand Wants Mechanical Equipment.**—The State Railway, Bangkok, invites bids for supply of various types of mechanical equipment, reports Foreign Commerce Weekly; specifications may be borrowed from Commercial Intelligence Division, Bureau of Foreign Commerce, Washington 25, D.C.

NYC Compromises—Would Cut 28 West Shore Trains

The New York Central, still contending its West Shore passenger operations ought to be totally abandoned, has asked approval of new schedules that would drop 28 daily trains from the commuter line.

The road submitted the schedules to the New Jersey Board of Public Utility Commissioners which last month turned

down an earlier request for complete abandonment of the passenger service (*Railway Age*, November 14, page 10).

At that time the board said a "limited schedule" might be satisfactory, noting that "adequate service" for commuters "could be afforded by operation of eight trains in each direction" between West Haverstraw, N.Y., and Weehawken, N.J. The Central's proposed schedules follow this suggestion exactly, listing eight morning trains to Weehawken for New

York City-bound passengers and the same number of trains to take them home in the evening. The line now runs 44 trains a day on the West Shore (River) division.

In a statement released with the filing of the new schedules, Alfred E. Perlman, NYC president, said "we hope these changes will reduce our \$3,000,000 annual deficit on the line." In the application, though, Central stated it was not waiving its "contention that public convenience and necessity no longer require continuance of any passenger service" on the line.

Operations

PRR and C&NW Join in East-Midwest TOFC Plan

The Pennsylvania has announced extension of its TrucTrain operations to provide through piggyback service between eastern and midwestern points in conjunction with the Chicago & North Western as connecting carrier at Chicago.

Highway trailers of the two roads will be operated through to connect New York City, Newark, Jersey City, Trenton, Philadelphia, Camden, Pittsburgh, Wheeling, Cincinnati and Louisville on the PRR, with St. Paul, Minneapolis, Milwaukee, the Green Bay area and Waukegan on the C&NW.

Freight will move on a single railroad bill of lading. Third morning delivery will be provided in each direction between Twin Cities and New York.



MISSISSIPPI CENTRAL PRESIDENT, L. E. Faulkner, will celebrate his 50th anniversary with that railroad on December 8. Mr. Faulkner, who also is general manager of the MC and a member of the road's board of directors, is shown accepting a citation in

his office at Hattiesburg, Miss. Left to right are LeRoy Morris, MC traffic manager; R. W. Fox, purchasing agent; F. E. Montgomery, auditor; Mr. Faulkner; H. O. Hoffman, superintendent; and S. B. Ringgold, chief engineer.

Car Shortages Have Cut Rail Traffic: Clarke

"Probably no one knows precisely how much traffic was diverted from railroads during the past six months because of failure to furnish freight equipment when it was needed," ICC Commissioner Owen Clarke said in Chicago recently.

Speaking before the triennial assembly of the YMCA Transportation Department, Mr. Clarke said that perhaps "\$544 million worth of traffic has been placed in jeopardy by the railroad inability to take care of customers when they wanted service."

Other speakers during the meeting included Chesapeake & Ohio President Walter J. Tuohy, who told the conference "there are healthy and heartening signs of a new look in railroading."

W. P. Kennedy, president of the Brotherhood of Railroad Trainmen, told the assembly that labor wants to see freight and passenger traffic on railroads increased. "Oftentimes other methods of transportation, through devious devices, are at an

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If you want real protection, long life, and convenient, timesaving operation, you can't beat the quick action of a good power operated rolling Steel Door. No other type of door can match their compactness in operation . . . the vertical roll-up action of the door curtain occupies no usable space either inside or outside the opening—and, there are no overhead tracks or other obstructions to interfere with material stacking or crane handling adjacent to door openings. A quick-opening, quick-closing Mahon Power Operated Rolling Steel Door will save valuable space and valuable time in any type of opening. In addition, Mahon Rolling Steel Doors are permanent—their all-metal construction assures a lifetime of trouble-free service, and provides maximum protection against intrusion and fire. They require less maintenance, too, because, when the door is open, the interlocking steel curtain is rolled up above the opening safe from damage. When you select a Rolling Steel Door, check specifications carefully . . . you will find extra-value features in Mahon doors—for instance, the galvanized steel material, from which the interlocking curtain slats are rolled, is BONDERIZED and DIP-COATED with synthetic enamel which is baked on at 350° F. prior to roll-forming. You will find other Mahon features in both design and materials that add up to a greater over-all dollar value. See Sweet's Files for complete information, or write for Mahon Catalog G-56.

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ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Six Mahon Power Operated Rolling Steel Doors installed in truck openings of a loading dock in the new plant of Sutherland Paper Co., Kalamazoo, Mich. Miller-Davis Company, Designers and General Contractors. A total of thirty-nine Mahon Rolling Steel Doors were installed in various types of openings in this plant.

MAHON



"OPEN-HOUSE DAY" in North Little Rock, Ark., was held November 13 when the Missouri Pacific opened the gates of its huge, newly remodeled diesel facility and permitted complete inspection by employees, their families

and friends, and other guests. Over 5,000 persons (some of whom are shown above), went through the facility, transformation of which from a steam locomotive shop cost the MP almost \$1,000,000.

unfair competitive advantage," he added. "No matter what unfairness there may be, it is still competition and it should be met with all possible resources."

CA&E Asks to Drop All Passenger Service

The Chicago, Aurora & Elgin has requested Illinois Commerce Commission authority to suspend all its passenger service.

Frank W. Flannigan, CA&E president, said passenger service would be resumed when a right-of-way into the Chicago loop is assured for CA&E trains.

Reason for the request, said Mr. Flannigan, is the accumulation of a \$1,800,000 net operating loss since through passenger trains from Chicago's loop to the western suburbs were suspended in 1953.

George R. Perrine, chairman of the commission, said he thought a "large portion" of the loss "is due to depreciation and reserve charges and that the actual out-of-pocket loss is probably small."

An estimated 13,000 daily riders would be affected if the commission approves the request. Freight operations would continue over the 54-mile railroad.

The CA&E lost its entrance to Chicago when part of the west side elevated line, over which CA&E trains operated, was torn down to make way for a new super highway. Chicago Transit Authority elevated trains were

rerouted on temporary street level tracks, but the CA&E said its trains could not operate over the temporary line and obtained permission from the Illinois Commission to halt trains at Forest Park, where passengers now transfer to CTA trains (*Railway Age*, August 10, 1953, page 12).

A right-of-way for CTA trains will be provided in the median strip of the highway but it has not yet been decided whether CA&E trains will use the highway right-of-way.

Long Island Boosts Fares; CNS&M Rise Delayed

Moving to offset wage increases it granted recently, the Long Island will raise its commutation fares December 6 an average of \$2.28 a month.

Permitted to adjust fares to meet rising costs through the railroad development law under which it emerged from bankruptcy, the road expects to realize \$3,675,000 in additional revenues from the increases. The New York State Public Service Commission, which may reduce the fares only if they are proved excessive, will start hearings December 15 to determine their reasonableness.

Another commuter line, the Chicago North Shore & Milwaukee, has petitioned the Illinois and Interstate Commerce Commissions for approval of a 15 to 20% fare increase. The state body, however, suspended the proposed fares until next March 27, setting hearings on the road's petition for December 13.

Reefers-for-Box-Cars Order Vacated by ICC

The ICC has vacated Service Order No. 909 which permitted railroads to substitute up to three refrigerator cars in lieu of each box car ordered for the transportation of fruit and vegetable containers, box shooks or other packing or packaging materials in Pacific-Coast territory. (*Railway Age*, October 10, page 10.)

The vacating order was Service Order No. 909-A, which became effective at 11:59 p.m. December 2.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended November 26 totaled 676,685 cars, the Association of American Railroads announced on December 1. This was a decrease of 94,963 cars, or 12.3%, compared with the previous week; an increase of 93,165 cars, or 16%, compared with the corresponding week last year; and an increase of 80,455 cars, or 13.5%, compared with the equivalent 1953 week.

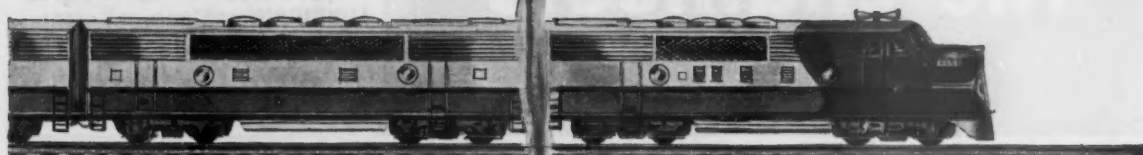
Loadings of revenue freight for the week ended November 19 totaled 771,648 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS			
For the week ended Saturday, November 19			
District	1955	1954	1953
Eastern	130,258	116,582	120,536
Alleghany	152,114	128,779	144,528
Pacahontas	61,316	53,137	51,285
Southern	136,897	122,753	123,665
Northwestern	105,182	89,941	101,800
Central Western	126,575	126,965	122,095
Southwestern	59,306	59,189	61,823
Total Western Districts	291,063	276,095	285,718
Total All Roads	771,648	697,346	725,732
Commodities:			
Grain and grain products	52,733	58,668	47,825
Livestock	11,922	11,533	11,079
Coal	148,340	131,453	127,637
Coke	13,333	9,046	12,221
Forest Products	41,205	42,986	44,088
Ore	61,526	26,201	45,662
Merchandise l.c.l.	63,372	63,049	66,596
Miscellaneous	379,217	354,410	370,624
November 19 ..	771,648	697,346	725,732
November 12 ..	796,632	708,749	727,058
November 5 ..	808,709	696,026	747,868
October 29	835,396	736,233	780,843
October 22	834,499	745,945	804,413
Cumulative total, 46 weeks	33,789,808	30,283,665	34,728,569

In Canada.—Carloadings for the seven-day period ended November 14 totaled 84,798 cars, compared with 86,216 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
November 14, 1955	84,798	32,671
November 14, 1954	77,396	27,549
Cumulative Totals:		
November 14, 1955	3,566,025	1,431,124
November 14, 1954	3,204,013	1,238,066

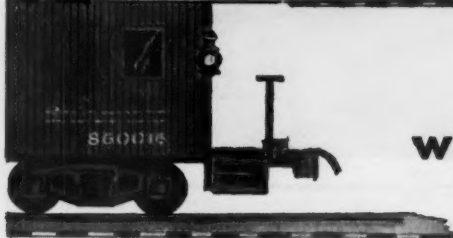
No capital investment required to



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Ever-Pac now puts in management's hands the remedy for what has always plagued them and shippers—expensive hot boxes. Over one-half of all hot boxes are directly attributable to "waste-grabs." *Ever-Pac* makes "waste-grabs" impossible. Shippers get faster, more reliable service. Costly breakdowns are virtually eliminated.

More impressive still is the fact that U. S. Ever-Pac costs 3 to 14 times LESS than other devices. And because Ever-Pac is a superior replacement for waste packing—it can be classified as an *expense* item—and NOT capital investment.

A product of United States Rubber Company, U. S. Ever-Pac requires no costly special oil seals.

- Interchanges with present equipment, without shop modifications, machining or additional labor costs. • Low-cost initial installation.
- Easy determination of oil level. • Low-cost upkeep.
- Trouble-free service. • No mechanical parts to get out of order.

U. S. Ever-Pac has A.A.R. approval for application to a specified number of cars which move in general interchange service (Docket No. L-129). We will be happy to have an engineer call on you with full details. Write or get in touch with us at Rockefeller Center, New York 20, N. Y.



Mechanical Goods Division

United States Rubber

The Engineer's Report

CASE HISTORY
RPM DeLo Oil R.R.
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Special oil maintains high average mileage record!



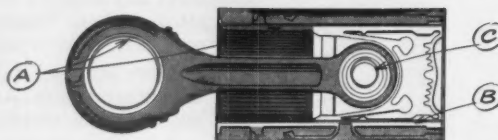
1776 CYLINDER ASSEMBLIES make up the 111 diesels in road freight service on the Western Pacific R.R. These units, as well as all passenger locomotives on the line, are lubricated with RPM DELO Oil R.R. Maintenance records of several years on freight locomotives show following average actual miles on parts removed for any reason: wristpins and bushings, 413,675 miles; pistons, 376,018 miles; liners, 354,101 miles. A representative assembly is shown in insert, just as it appeared after 476,497 actual freight miles. Note cleanliness of parts and free rings—typical of Western Pacific's experience with RPM DELO Oil R.R., the standard on the line since 1949.

FOR MORE INFORMATION about petroleum products of any kind or the name of your distributor, write or call any of the companies listed below.



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How RPM DELO Oil R.R. prevents wear, corrosion, oxidation



- A. Special additive provides metal-adhesion qualities...keeps oil on parts whether hot or cold, running or idle.
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- C. Special compounds stop corrosion of any bushing or bearing metals and foaming in crankcase.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA OIL COMPANY, Perth Amboy, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado

People in the News

Cross Resigns from ICC

Hugh W. Cross' service as a member of the Interstate Commerce Commission ended November 25. His resignation, submitted November 23, was accepted by President Eisenhower as of the close of business two days later, Mr. Cross having asked that it be effective "immediately upon your acceptance."

The resignation came after Mr. Cross had appeared at an executive session of the Senate Permanent Subcommittee on Investigations, which was inquiring into his alleged intervention in negotiations that gave Railroad Transfer Service, Inc., the contract (long held by Parmelee Transportation Company), covering transfer of passengers and baggage between railroad stations in Chicago (*Railway Age*, November 21, page 7). At the time of his resignation, Mr. Cross was the commission's chairman, a position he assumed for one year last July 1 under the commission's rotation plan. Next in line under that plan would be Commissioner Kelso Elliott.

The Cross letter of resignation said in part:

"To me it has been a signal honor and privilege indeed to have had the opportunity of serving on the commission both before and during your Administration.

"While I have been contemplating returning to private life for some time, my reasons for leaving public service at this time are threefold:

(1) My concern about the health of my wife as well as the uncertain condition of my own health, as evidenced by the attached letter of Nov. 9 from our family doctor to my wife;

(2) My regard and respect not only for my fellow members of the commission but also for the unblemished reputation of that commission over many years; and

(3) My regard and respect for you and your Administration.

"But for these considerations, I would remain and defend to the end against the baseless charges which have been made against me before a Congressional committee. However, aside from my health and that of my wife, I am realistic enough to know that, unfounded as they are, the mere pendency of such charges impairs my further service on the commission and its proper functioning in the public interest. I feel that you, the Congress, the industry under regulation, and the people of this country are entitled to have the Interstate Commerce Commission continue to function free from any such impairment."

Praise from President—After saying he would make the resignation effective immediately, "since I understand that to be your wish," President Eisenhower, in his acceptance letter, added:

"In doing so, however, I would like to express appreciation for the years of diligent service you have rendered with the commission and for the constructive contributions to its work that you have made. You should draw enduring satisfaction from the knowledge of that contribution.

"As you return to private life, may I add my personal wishes for good health for

you and Mrs. Cross in the years ahead."

Mr. Cross had been a member of the commission since 1949, having been appointed by former President Truman. A Republican, he was formerly lieutenant governor of Illinois. His resignation left two vacancies on the commission, the other having been created by the recent resignation of former Commissioner J. Haden Alldredge, who has entered private practice of law. Another vacancy will occur at the end of this year, when the term of Commissioner J. Monroe Johnson expires.

W. J. Patterson Dies; Was Member of ICC

William J. Patterson, former member of the Interstate Commerce Commission, died in Washington, D. C., November 24. He was 75 years old.

Mr. Patterson retired as commissioner July 10, 1953, thus rounding out a career with the commission which began in 1914. Until his appointment to the commission in 1939, that career was with the commission's former Bureau of Safety, of which he was assistant director for 16 years and director for five years.

Supply Trade

Ralph E. Campbell, field engineer, SKF Industries, Inc., at Pittsburgh, has been named district manager there.

George Wishner, branch service manager, Towmotor Sales & Service, Inc., has been appointed manager of the Chicago office.



V. J. NIEDERRITER, who has been appointed manager of the railroad products department, Railroad Division, Fairbanks, Morse & Co., at Chicago. He succeeds William G. Herzig, who has resigned to take a special assignment with the Chicago branch of the corporation.

Norman E. Carlson has been named director of engineering, American Car & Foundry Division, ACF Industries. He will also continue as works manager of the St. Charles, Mo., plant.

Tom Barrett, sales representative of the Wisconsin Motor Corporation, has been named assistant sales manager.

OBITUARY

Harold H. Henricks, 66, president of Youngstown Steel Door Company, died in Kansas City, November 20. Mr. Henricks was graduated from the University of Illinois in 1911 as a mechanical engineer. He joined the Camel Company, in Chicago, at the end of World War I, during which he was a first lieutenant in the United States Air Force. In 1924 he joined Youngstown Steel Door as production engineer, becoming superintendent of the company's Youngstown, Ohio, plant in 1929; vice-president, manufacturing, in 1933; a director of the company in 1943; and president in 1948.

Herman F. Ball, 88, who retired as vice-chairman of Franklin Railway Supply Company in 1945, and as a director of the company in 1952, died at his home in Philadelphia, November 23.

Competitive Transport

CAB Eases Restrictions On "Non-Sked" Air Lines

Limitations on operations of so-called irregular air carriers (non-skeds) will be eased January 1. That is the effective date of a new policy with respect to such carriers which has been adopted by the Civil Aeronautics Board.

The new policy came out of the board's investigation of approximately 50 large non-skeds. Those carriers will no longer be called "irregular," they will be "supplemental air carriers." And they will no longer be confined to irregular and infrequent flights. They will be allowed to offer regularly scheduled service up to a maximum of 10 individually ticketed flights per month in the same direction between any two points.

In another decision, the board approved establishment of commercial air charter clearing houses by the Air Coach Transport Association and the Independent Military Air Transport Association. The approval is for a three-year experimental period.

These associations are groups of irregular air carriers, and the clearing houses will be operated to solicit and

(Continued on page 72)

Questions and Answers FOR THE TRANSPORTATION DEPARTMENT

Over the years, have the railroads reduced the out-of-service time of cars bad-ordered for light repairs?

Yes — and No.

The late L. F. Loree, president of the Delaware & Hudson, found that on his railroad cars bad-ordered for light repairs were out of service an average of 56-60 hr, which included an average of 20-21 hr on repair tracks unworked or awaiting material. We asked a number of railroad people whether or not this out-of-service time had since been reduced.

We gave three answers to this question in this column November 7. Here's another:

"I have made a hasty check on our railroad for the month of September which indicates that light repairs were given to more than 800 cars per day. The reports further indicate, as of 2 p.m. each day, cars reported as requiring light repairs averaged slightly less than 500. These figures show that we are repairing light repair cars in less than 24 hr plus additional cars which are so carded during the afternoon and night.

"This does not, of course, give the

entire picture as there is additional time out of service in getting cars switched out and moved to the repair tracks and, after repairs are made, back to train yard and into transportation channels.

"While I do not have detailed figures, it would be my opinion that the time lost by most cars from transportation service would average very close to the figure quoted by Mr. Loree, i.e., around 56-60 hr.

"We have concentrated on expeditious handling of such cars from the train yard to the repair track; prompt action in making repairs; and regularity in 'pulling' light repair tracks in an effort to secure maximum utilization from each unit of freight equipment, especially during the current car shortage. At many points on our railroad certain 'tinker' repairs, such as changing brake shoes or something minor of that nature, are made in the yard."—E. E. Foulks, assistant vice-president, Rock Island.

What is the interpretation of the following expressions used in the demurrage tariff:

"within the confines of the same industry"; and "the time incident thereto"?

One period in one plant.

A reader has written as follows:

"The clause 'within the confines of the same industry' means within one and the same plant. It does not cover switching from one plant to another of an industry where an interplant movement would make it necessary for the railroad to move such a car over railroad tracks from one plant to another. The same principle holds true in relation to the phrase, 'the same public delivery yard'.

"There would be only one period of free time. The rule in question is specific regarding a car placed for unloading. Whether or not such car is partly unloaded at point where so placed, if it's moved by railroad or private power to another point within the confines of the same industry or the same public delivery yard to unload, 48 hr free time will be allowed for the entire transaction. The exception to this is that when the railroad makes a charge for the movement the time incident thereto shall not be computed against the car.

"The exception to the total of 48 hr free time is found in the clause reading, 'Except that when this railroad makes a charge for such movement, the time incident thereto shall not be computed against the car.' This clearly indicates that only one period of 48 hr is to be allowed for the entire transaction, plus any time incident to the movement of the car when the railroad assesses a switching charge.

"The time incident thereto shall not be computed against the car' means

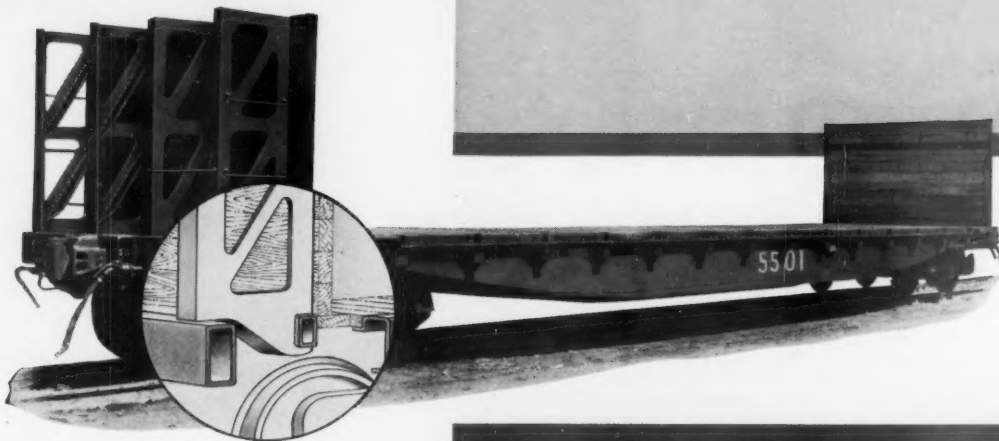
the time consumed by the railroad in making the movement. But what if the railroad failed to make the movement at its regular time for switching after the order to switch had been received? In that case 'the time incident thereto' includes the time of actual movement of the car, plus the time between the missed switch and the time the next actual switch was begun."—S. R. Jennings, manager, Eastern Demurrage & Storage Bureau.

More Car Service "Quiz" Answers:

Supplementing the results published in the November 21 issue, 59 more answers have been received to the October 15 Car Service "quiz," 10 of which were correct. However, none of them matched the preferred solution. Final totals, therefore, are: total answers received—198; correct—30, of which 14 matched the preferred answer.

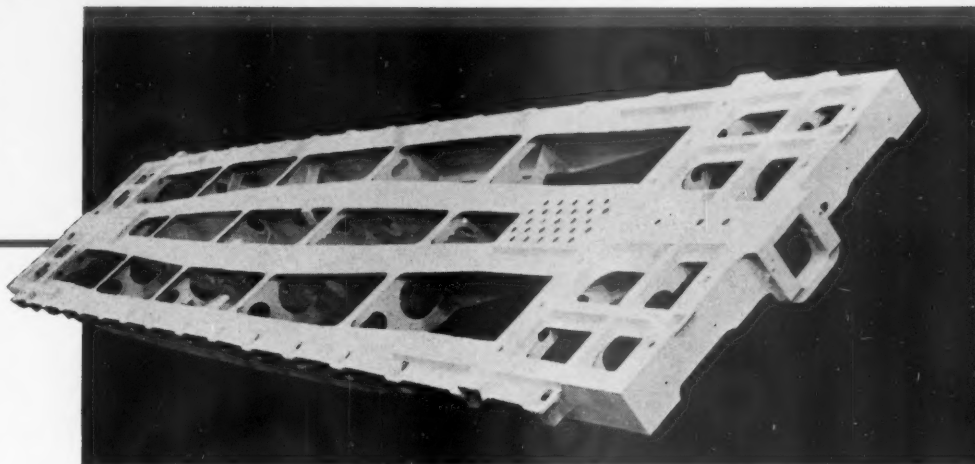
The names of those submitting the 10 additional correct answers follow: J. P. Brubaker, agent, Reading, Landisville, Pa. W. J. Caleskie, yardmaster, Erie, Croxton, N. J. J. R. Cassidy, freight agent, Erie, Meadville, Pa. E. Conn, clerk, Erie, Croxton, W. J. Flusk, agent, Erie, Jersey City, N. J. H. Forley, checker, Erie, Croxton. C. Gilchrist, foreman, Erie, Jersey City. R. Routh, general foreman, Erie, Jersey City. H. A. Ulicki, yardmaster, Erie, Croxton. S. F. Unselewski, yardmaster, Erie, Croxton.

CONDUCTED By G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, Railway Age, 30 Church Street, New York 7.



50-ton, 53' 6" bulkhead car with Commonwealth one-piece cast steel underframe and interlocking cast steel ends.

Cast steel flat car underframe designed for application of upright ends.



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BULKHEAD CARS

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Thousands of flat cars with Commonwealth underframes have been in service for many years, proving their exceptionally long maintenance-free life and the *sound economy* of the investment they represent.

Plan wisely for the future — invest in Commonwealth one-piece underframes



GENERAL STEEL CASTINGS

GRANITE CITY, ILL.

EDDYSTONE, PA.

Letters from Readers

Inter-Agency Competition Doesn't Need Regulation

DEARBORN, MICH.

TO THE EDITOR:

Your October 17 issue reporting the discussion at Marquette University (page 7) does not state correctly the views I expressed at this meeting with respect to regulation of the carriers.

What I said was that I thought consideration might well be given to relieving ICC of responsibility over

maximum and minimum rates instead of leaving a sort of "no man's land" between minimum and maximum rate levels.

In further explanation of these views I stated that I thought effective control of competition between carriers might be attained by setting up the principle that whatever rate any type of carrier made would be used as a measure of reasonableness. It of course would remove the advantage of rate differentials based upon competitive conditions. It is my thought that restricting the carriers to a single measure of reasonableness of rates for the particular type of carrier would to a large degree make the rate level self controlling and the inherent ad-

vantage of each type of carriage would be developed.

I am a firm believer that we need much relaxing of regulatory control and that this should include release of control of rate levels because of competition between carriers. The shipper in my opinion could afford to rely on competition to keep the general level of freight charges on a fairly satisfactory scale.

The regulatory agency would then be used largely to guard against excessive charges.

HARRY D. FENSKER
Transportation Consultant

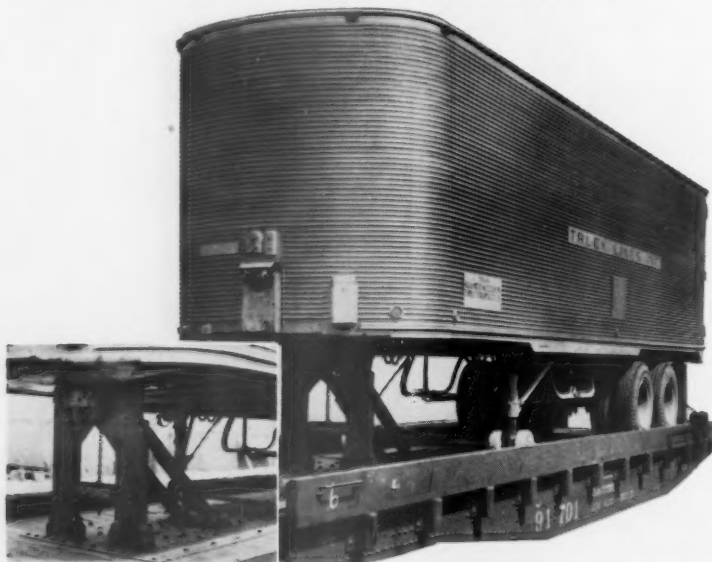
For your precious loads
you want a
well built
carrier



PIGGY-BACK PAK HOLDS DOWN ALL MAKES TRAILERS WITHOUT SPECIAL ATTACHMENTS... heart of the

Paxton-Mitchell Piggy-Back Pak is the main support which requires no chains... is supported by two 4" diagonal "T" bars. Unit knocks down for axle clearance by pulling four disconnect pins.

Chain and windlass work on under frame of any size trailer. Get complete details from your nearest Paxton-Mitchell Sales and Service representative, or the home office.



DESIGNERS ENGINEERS FOUNDERS FABRICATORS

PAXTON-MITCHELL
company

27th and Martha Sts.

Omaha 5, Nebraska

More Sales Training?

PUEBLO, COLO.

TO THE EDITOR:

Somebody in or around the railroad business ought to make available a whole series of articles dedicated to improving the railroad's passenger service product and the salesmanship of its personnel.

May I quote Edward McKay, marketing consultant for General Electric: "The old concept of someone designing a product, someone making it and someone selling it is *passee*. Good selling starts with a knowledge of what the customer needs, wants, will buy and will pay for. From this knowledge, the product is designed to fit the customer's needs and desires."

And yet another marketing consultant:

"Too many firms fail to recognize the importance of salesmen feeding back the shortcomings of products—perhaps to show the need for improved or new products. *The salesman is the best man to do it.*"

Selling has been too long and too much neglected by railroads. There is a tremendous job of selling to be done to customers and communities. But there is also a tremendous job of selling to be done within the railroads themselves. We've got to sell every railroader that the customer's welfare is his welfare; that courtesy, whether by word or tone of voice, or lack of service in any way, is endangering his job—if not directly, then indirectly, through general decline of business.

Articles in your magazine, in company magazines and other publications can make a start at educating railroad men in courtesy and service. Such articles could discuss new selling techniques and ideas, possible "pricing policy" changes, and many other things.

If we hope to share a better future, I hope we will not stop at just price or just new trains, but I hope we will—for we must—learn "what the customer needs, wants, will buy and will pay for" . . . and then pull all stops and give it to him.

JAMES E. ANDERSON
City passenger and ticket agent
Missouri Pacific lines

GREATER SAFETY AND EFFICIENCY IN MOTOR CAR OPERATION

with *Federal*

2-WAY MOBILE RADIO SYSTEM

FT-156-10
Designed for mounting in protected locations
(Motor Car Model 101, Courtesy of Fairbanks-Morse)

Gives your work crews fast, direct, dependable radiotelephone communication from motor car to motor car... to walkie-talkie... to fixed stations... to moving trains equipped with radio!

Overall Features of Federal's FT-156-10 and FT-153-10

Designed to meet or exceed all FCC regulations and RETMA specifications

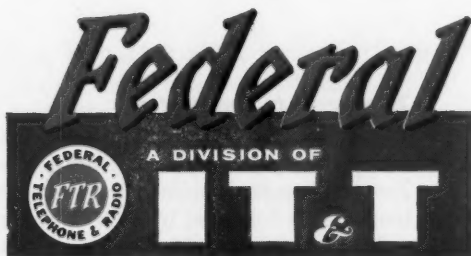
- 10 watts power output
- Low standby battery drain
- Adjacent channel receiver
- Adaptable to various mounting arrangements
- Small, compact, rugged
- Quickly-removable chassis
- Easy to install and maintain

Federal 2-way mobile radio starts paying dividends right away... all along the right-of-way! Bigger dividends in safety for motor car crews... in faster and more efficient road inspection and maintenance operations.

Motor cars can be speedily informed on position of trains... receive orders and instructions on location... transmit information and emergency calls... save mileage, man-hours and fuel.

In addition to the four types of contact shown above, motor cars can talk to the dispatcher when car is within the range of a fixed station, or make contact through trains with radio.

Federal's FT-156-10 and FT-153-10 two-way systems are outstanding for their ruggedness and reliable performance under *tough* conditions. Both are compact, one-package systems... easy to mount... simple to maintain... economical to operate. Write for complete details.



Distributed by Federal's Railroad Industry Sales Organization. Address inquiry to Dept. P-647A.



Federal Telephone and Radio Company

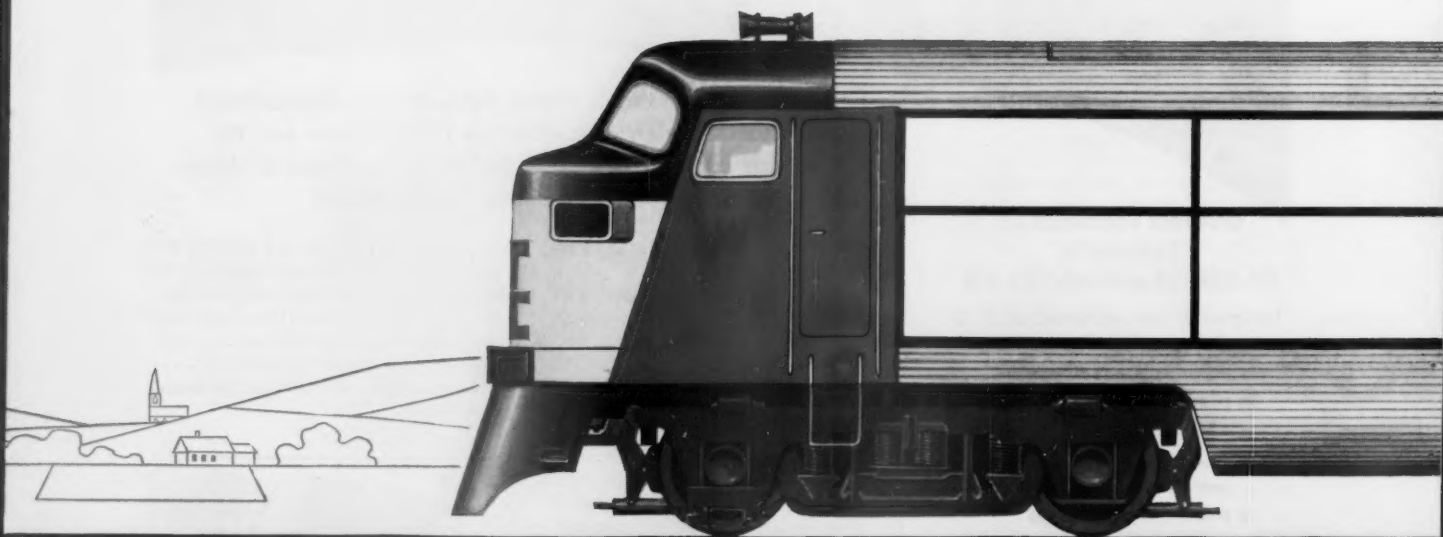
A Division of INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION
100 KINGSLAND ROAD • CLIFTON, NEW JERSEY

In Canada: Standard Telephones and Cables Mfg. Co. (Canada) Ltd., Montreal, P. Q.
Export Distributors: International Standard Electric Corp., 67 Broad St., New York



Fairbanks-Morse

Speed



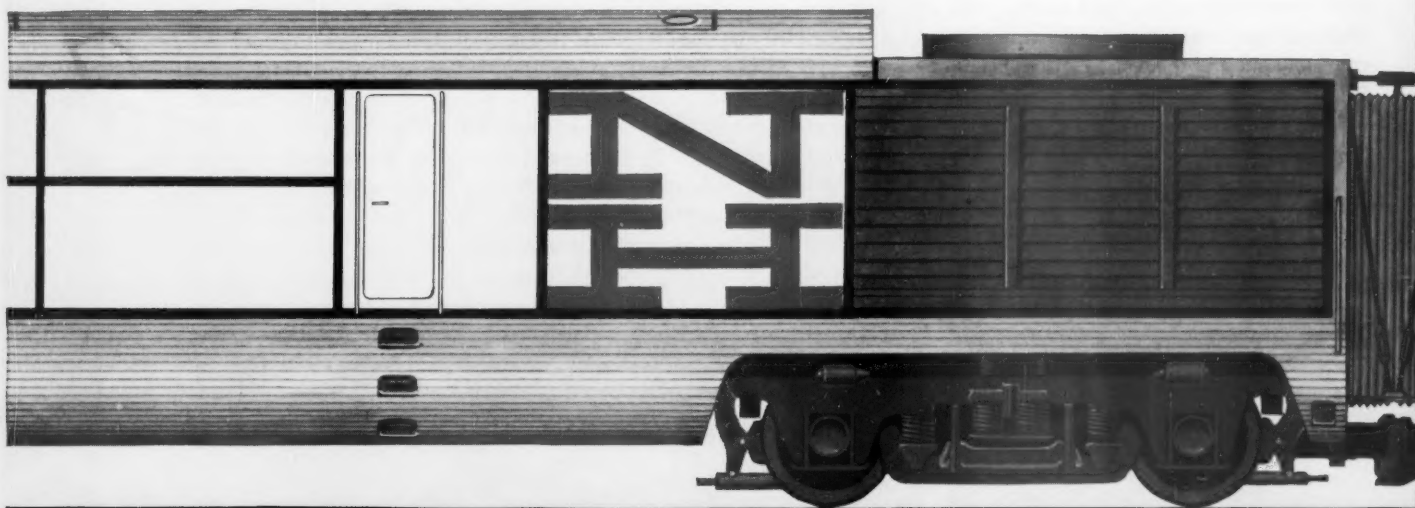
Newest Design

The Speed Merchant is the latest design of tomorrow's high-speed locomotive, ordered by the New Haven to handle new Talgo type equipment being delivered by ACF Industries.

It is a Fairbanks-Morse motive power design that combines the maintenance simplicity of a single engine power plant and the dependability of railroad proven Opposed-Piston Diesel power.

Tomorrow's high-speed locomotive

Merchant



Single Engine Power Plant

This single engine power plant not only supplies high horsepower for traction but also delivers ample power for full auxiliary load—train service, train lighting, heating and air conditioning as well as power for food service.

Both Diesel and Electric

The Speed Merchant's ability to operate as either a diesel-electric or straight electric locomotive enables the New Haven to make the

entire trip from Boston to the Grand Central Terminal without changing motive power.

High speed. Proven power. Simple maintenance. These are the advanced features of the new Fairbanks-Morse Speed Merchant designed to put profit back in passenger service.



FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • MAGNETOS



NEW, HALF-MILE LONG freight car repair shop—viewed from the air—looks like the deck of a super aircraft carrier. Named for the Pennsylvania Railroad's ninth president, the "Samuel Rea" will combine all repair operations under one roof.

TO HELP EASE THE SHORTAGE OF ROLLING STOCK

Pennsylvania Railroad Sets Up World's Largest Car Repair Shop, Uses G-E Power Distribution System

To help solve the present freight car shortage by getting more cars back on the road quicker, the Pennsylvania Railroad has invested in the newest and largest freight car repair shop in the world—the half-mile long "Samuel Rea" repair shop at Hollidaysburg, Pa. This new installation, which will be pressed into full service late next Spring, consolidates the repair work now being performed by the Pennsylvania at 12 different locations around the railroad. By combining repair operations under one roof and using production line methods of work, this giant four-track, steel-frame structure will have an initial capacity for rebuilding 50 cars of all classes a day. Later, by working added shifts, the capacity will be increased to 80 cars or better.

For adequate distribution of power and to protect the

electrical circuits in this new and important facility, up-to-date G-E electric equipment has been installed at strategic locations throughout the huge shop. Among the General Electric equipment included in the plant's power distribution system are five outdoor substations totalling 14,000 KVA transformer capacities (together with the associated switchgear); metal-clad incoming-line switchgear units; and some 2200 KVA of dry-type transformers.

General Electric, world's largest manufacturer of electrical apparatus, has a complete line of power distribution equipment that can be tailored to fit the requirements of *any* railroad installation—*large or small*. For further information on G-E power distribution systems, call your nearest G-E Apparatus Sales Office. General Electric Company, Schenectady 5, N. Y.

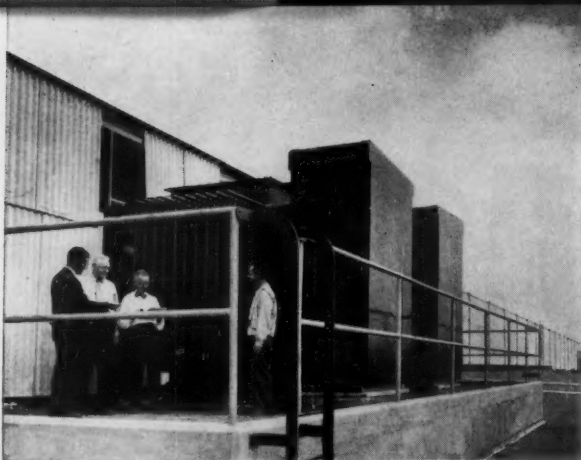
152-58A

Progress Is Our Most Important Product

GENERAL  ELECTRIC



WORKING CLOSELY TOGETHER, railroad officials, electrical contractor and G-E representatives planned shop's electrical system. Shown here are (l. to r.) C. J. Henry, Chief Engineer—Eastern Region, Pennsylvania R.R.; W. S. O'Sullivan, G-E switchgear specialist; W. R. Govett, Vice President and Chief Engineer, Harry F. Ortlip Co.; R. E. Nopper, G-E transportation sales engineer; and H. M. Wood, Assistant Chief of Motive Power—Cars, Pennsylvania R.R.



COMPACT G-E UNIT SUBSTATION, one of five installed at world's largest freight car repair shop, is double-ended with 1500 KVA of transformer at each end.

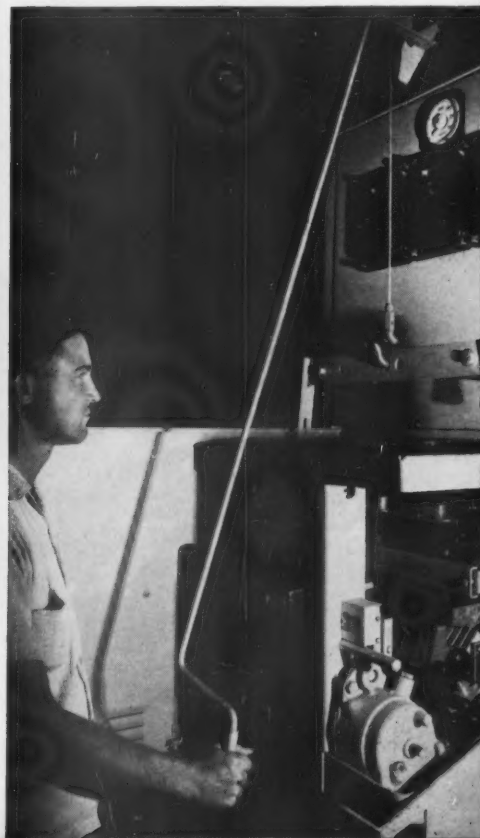


HEAVY REPAIR WORK on cars of all classes will be performed once the huge shop is readied for full operation. At present, only minor repairs are being carried out. Above, repairmen work on underside of a gondola car. In top center of photo, two G-E dry-type single-phase transformers feed power to overhead fluorescent lights.



MODERN G-E METAL-CLAD SWITCHGEAR equipment in main switching station provides control and protection of the incoming power line. This type of equipment offers highest safety for personnel.

INSIDE SWITCHGEAR ROOM of G-E substation, low-voltage drawout circuit breakers are easily inspected. Breakers fit in sturdy metal compartments as shown below.



NO MORE

PLYPAK
UNCONDITIONALLY
APPROVED BY
A.A.R.

The PLYPAK has A.A.R. approval for unlimited application in interchange for those roads desiring its use — protected in interchange. See rule 101.

36 MONTH
REPACK
PERMITTED
with
PLYPAK

36 month repack fully tested. Approval may be obtained on request to A.A.R.

PLYPAK
REDUCES
HOT BOXES
by more than
80%

Sept. 12th 1955 Railway Age in "Pensy proves its Plypacks" reports 1/5 the percentage of hot boxes for Plypak equipped cars.

MORE THAN
200,000
PLYPAK
WASTE RETAINERS
IN SERVICE ON
32 RAILROADS



WAUGH

420 Lexington Ave., New



Loose

WASTE !

PREVENT HOT BOXES

due to lubrication failure

Equip with

PLYPAK

WASTE CONTAINER AND RETAINER

More than 200,000 PLYPAKS in service on 32 railroads tell the story. PLYPAK is the answer to the hot box problem.

Under all operating conditions, PLYPAK holds waste in place ... even at sub-zero temperatures.

To eliminate the hot box caused by lubrication failure, equip today with PLYPAK!

EQUIPMENT COMPANY,

York 17, N. Y. Chicago • St. Louis • Canadian Waugh Equipment Company, Montreal

International distributor delivers...

500 TD-24's

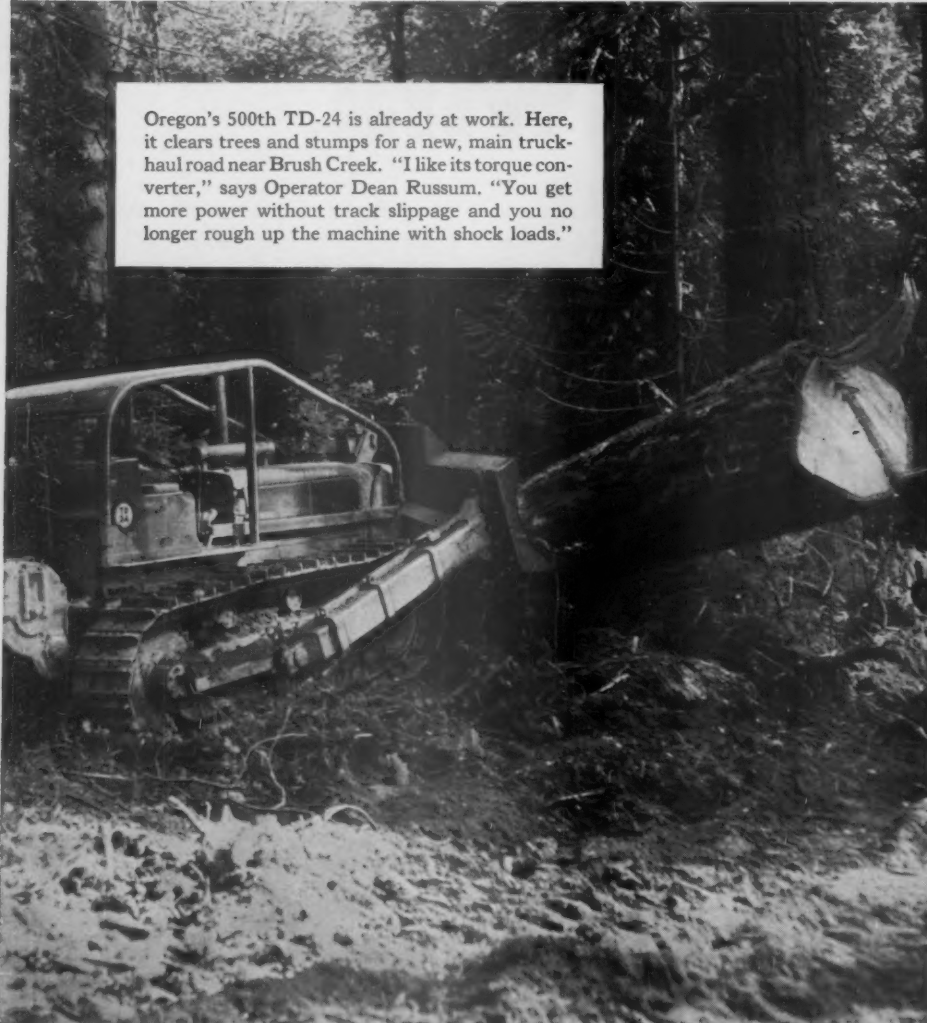
For pioneering and road building in the rugged northwest

Howard-Cooper Corporation, one of International's 31 Western area distributors, have just delivered their 500th TD-24!

You see this big 200 bhp crawler already at work for Wooley Logging Company, Drain, Oregon.

In rough, tough, Pacific Coast, big-scale logging, mining, and earthmoving, profitable production depends upon positive load-control, up-grade or down. *The TD-24 is the only tractor built that has planet-power steering—which gives you con-*

stant load control on both tracks when turning. That's why the TD-24 out-produces the others so decisively, with dozer, arch, or scraper! Another big TD-24 advantage is its built-for-the-West construction. Records, on fleet after fleet, prove that TD-24's stand up under the toughest conditions—and consistently cost less for maintenance than any other make on tracks! TD-24 high-altitude performance is a big advantage, too—so is its seconds-fast, cold-weather starting and operating ease!



Oregon's 500th TD-24 is already at work. Here, it clears trees and stumps for a new, main truck-haul road near Brush Creek. "I like its torque converter," says Operator Dean Russum. "You get more power without track slippage and you no longer rough up the machine with shock loads."



TD-24's

6 for A. J. Orlando on Massachusetts Turnpike—Most of the tractor work on this Whiteside (N.Y.) contractor's 4.89-mile, 2,500,000-yard, \$3,340,000 section of the Massachusetts Turnpike is being done by TD-24's. One pushing 3 scrapers accounts for 4,500 pay yards every 10 hours (scrapers on 1,500-ft. one-way hauls). Others pull rippers, level fills, etc.

If you're in the market for a big tractor, you owe it to yourself to check the leader... the International TD-24. Five-hundred owners in just one area have proved it their "Best Buy." If it can so successfully and so profitably lick the tough rock, cold weather, and mountain grades of Oregon, it can successfully and profitably lick your high-cost jobs, too! Let us prove its advantages with a demonstration. Call to arrange time and place.



PAY OFF ACROSS THE COUNTRY

6 for J. D. Armstrong on Kansas Turnpike—Of their 9 TD-24's, this Ames (Iowa) contractor reports all have run 5,000 hours or more before needing any repair work. Six on 1.7-mile, million-yard Turnpike section near Emporia, are towing 50-ton rollers, pulling and push-loading scrapers. On hauls of 700 to 2500 ft., they account for 5,000 pay yds. per day.

2 for J. W. Moorman on Buford Dam, Georgia—These "24's", two of the five now owned by Moorman, push-loaded scrapers or pulled 50-ton rubber-tired rollers, 18 hours every day for 18 months. On compaction, they averaged 180,000 cubic yards weekly for the 200-ft.-high, 1630-ft.-long main dam. Moorman's other TD-24's are used to push-load scrapers, and pull or push belt loaders.

3 stripping overburden for Meyer Bros., Pennsylvania—"Proven crawlers," says Partner George Meyer of his TD-24's. "We've used our 3 for 3 years now. They have good balance plus unmatched push power." Right now, rigs are removing 30 feet of shale and clay to uncover a 30-inch vein of bituminous coal. The 2 TD-24's do 80% of the job; a large shovel, 20%.

International



Industrial Power

A machine size for every job... see your nearest
**INTERNATIONAL
DISTRIBUTOR**
for details.



PAYSCLAPERS
13 yds. and 18½ yds.



WHEEL TRACTORS
8 Models... 5 to 55 hp



CRAWLER TRACTORS
Models... 40 to 200 hp



DIESEL, GAS ENGINES
18 Models, 18½ to 200 hp

Also: International Draft Loaders... International Scrapers, Bottom-Dump Wagons... and International Superior Pipe-Boom Tractors.

*The shortest distance
between two points is a* **Safe,**

for smooth hauls...at high speeds...

the TrucTrain rides on A-3 trucks



*Designed
and developed by _____*

Smooth Ride

Keep your eye on a current example of railroad foresight
... the Pennsylvania Railroad in cooperation with the Rail-Trailer Company
has inaugurated the new TrucTrain service running daily from New York to Chicago.
It's the first long-distance service of its kind.

Two new, fast trains have just been put into service,
each train with a capacity of 100 loaded trailers. Brand-new, specially built
75-foot flat cars are in the consist, carrying two trailers per day.
Service between points: 29 hours flat!

Some will call this an experiment . . . but it's also *progressive railroading*.
Industry benefits from progressive railroading, and industry will patronize it!



ASF

AMERICAN STEEL FOUNDRIES

410 N. Michigan Avenue, Chicago 11, Illinois

Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec



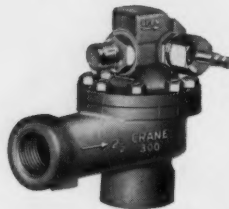
"Looks like we'll stop car-heating troubles now"
"Yeah, the P. A. bought CRANE'S New End Valve"

Ask mechanics in your own car shops about the repair headaches that come with end valves that stick tight, or leak constantly. Then look at cost factors—down time for cars, new parts or a new valve, labor charges—each time an end valve rates a B. O. tag!

Then ask your Crane salesman—about the *new Crane Passenger Car End Valve* . . . about the tests on Class I railroads that prove its superiority.

Crane engineers designed and built these end valves to take the pounding, shock and vibration of steady rail travel . . . for quick, easy manual operation . . . and to assure minimum maintenance and maximum passenger comfort.

For mechanical and operating details, see your Crane salesman, or write for End Valve Folder AD-2038. *Crane Co.*, General Offices: 836 S. Michigan Ave., Chicago 5, Ill. Branches and Wholesalers Serving All Industrial Areas.



How It Works. Built for 3-position operation. *Bleed Position:* rotate stem clockwise 15°. *Open Position:* rotate stem clockwise to 90°. *Closed Position:* rotate stem counterclockwise 90°. Working pressure — 300 pounds steam, 600° F. Max. Temp. Size, 2½".



CRANE CO.

**VALVES • FITTINGS • PIPE
KITCHENS • PLUMBING • HEATING**

CRANE'S FIRST CENTURY...1855-1955



HENSCHEL

supplies Diesel electric locomotives,
General Motors design,
with Diesel engines, output from 950 to 1900 HP
with one or two cabs
for shunting-, express and goodstrain service.
These locomotives can be also supplied
of streamline design.



The locomotive G12 of 1425 HP
on the line
Wien-Semmering (Austria)



H E N S C H E L & S O H N G M B H K A S S E L

Season's Greetings..

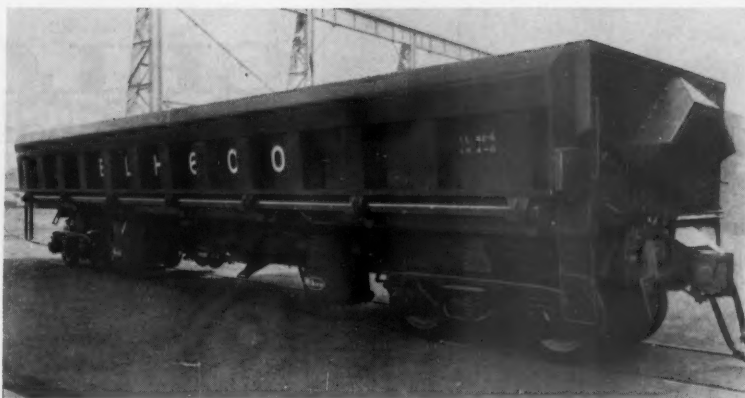


**THE WINE RAILWAY
APPLIANCE COMPANY**
TOLEDO 9, OHIO

What's New in Products

Brake Cylinder Lubricators

Lube-Rings and Lube strip lubricators are made from graphited porous rubber and felted cotton fibers. When these rings or strips are used in brake cylinders and around the hollow rod, the continuous flow of graphite lubricating material forms a long wearing, frictionless, sliding surface. These lubricators are said to eliminate possible piston cup swelling encountered when using petroleum-base cylinder lubricants. They are manufactured to close tolerances for precision fit around the air brake piston and hollow rod. A built-in resilient property is said to maintain even pressure of the lubricator with the surface to be lubricated. *Gustin-Bacon Manufacturing Co., Kansas City, Mo.* •



Baldwin's 100-Ton Dump Car

The Western dump car is now available with a capacity of 60 cubic yards or 100 tons. The car is designed for heavy-duty hauling and for general maintenance-of-way work. Alloy steel has been utilized to minimize dead weight without sacrificing strength. The single all-welded underframe, floating door mechanism and reinforcing were all designed to assure long service with low maintenance costs.

The steep dumping angle, dual side pivots and large air cylinders are in-

tended to give rapid dumping even on low air pressure. The automatic air-operated dumping mechanism operates a body which has been designed with a low center of gravity for maximum stability while operating over the road and while being dumped. The door control mechanism, at the end of the car, is enclosed and fully protected.

The double-plate, curved-top drop doors prevent material from accumulating on the track during the dumping operation. *Baldwin-Lima-Hamilton Corporation, Philadelphia 42* •



Diaphragm Material

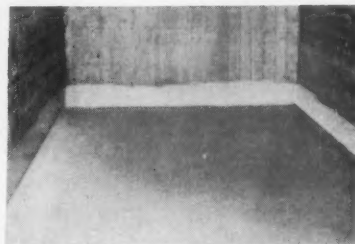
Dynel diaphragms using an impregnated synthetic fiber have now seen two years of road service on passenger cars. One railroad is using them for replacements on both passenger cars and diesel locomotive units. Dynel is a high-strength synthetic fiber material which resists mildew and, according to a railroad user, has "excellent fireproof and waterproof qualities." The material is said to retain its fireproof qualities longer than any other materials. *Textile Fibers Department, Carbide & Carbon Chemicals Co., 30 E. 42nd st., New York 17* •

Plastic Upgrader

The latest entry into the field of plastic coatings to produce tight cars for high-grade bulk commodities like grits, flour and grain is a coating that is expected to last indefinitely regardless of the abuses a car receives.

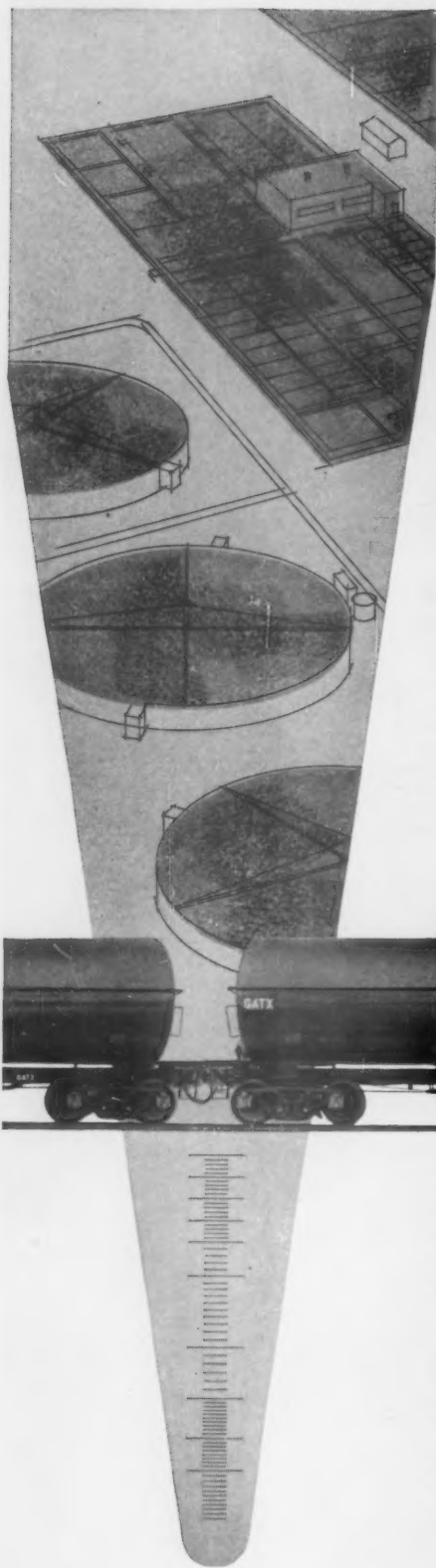
The new plastic base material, Armortex, is a tough mastic which bonds to box car floors and walls after initial application. The product, when dry, forms a smooth surface which can be cleaned by normal methods of hosing, blowing, or sweeping. Where cars are washed, there is no water absorption. Armortex is not brittle, 1/4-in. thick film bending around a 1-in. mandrel without cracking. Because the wood color coating is an oil-in-water emulsion, it presents no fire hazard either in storage or application.

One man can apply this material to a car floor in less than thirty minutes or coat all interior wood surfaces in about three hours. In either case the car will be ready for service the next day. It may be put on by spray, brush, trowel or squeegee.



For floors, the recommended method is to pour out one to two gallons of Armortex and spread it with a squeegee. For the sides and ends of box cars a rough spray coat is applied and material is worked into cracks with a squeegee.

When the plastic is in a container or in the form of a wet film, it should be protected from freezing. While resistant to freezing, it is not advisable to apply the material at air temperatures under 45 deg F. When necessary to apply Armortex during cold weather, salamanders or car heaters may be safely used. *J. W. Mortell Company, Kankakee, Ill.* •



CHLORINE

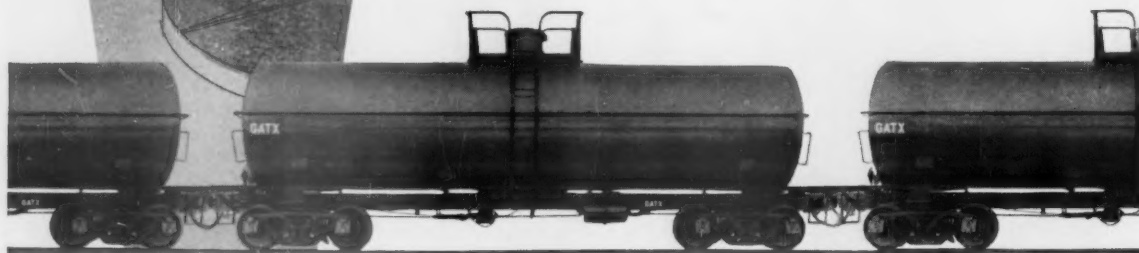
shipped best in special

GATX

pressure tank cars

GATX pressure cars for chlorine do double duty. They not only serve as the shipping container, but as the storage tank as well. Accurate controls built into these cars permit users to unload the chlorine as it's needed. For greater flexibility, General American offers four sizes of cars—55-ton, 30-ton, 16-ton and multiple-unit cars carrying fifteen one-ton containers.

There's a GATX tank car that's built or can be built to meet your bulk liquid shipping needs. You can choose from over 200 types in the fleet of 48,000 cars designed, built and operated by General American. General American's 38 repair shops service these cars quickly and efficiently for you. For the *right* tank car for your product, write or call your nearby General American district office.



typical products successfully shipped in GATX pressure tank cars • Anhydrous Ammonia • Butane • Propane • Ethylene Oxide • Propylene Oxide • Vinyl Chloride • Methyl Chloride • Ethyl Chloride • Chlorine • Carbon Dioxide

features of GATX pressure tank cars*

All-Welded Tank, Jacket and Underframe • Flued-Dome Construction** • Safety Dome Platform (Available) • Painting to Specification (Available) • Insulation • Specially Designed Fittings (Available)

*Standard equipment unless otherwise noted.

**The one-piece flued-dome saddle was designed and pioneered by General American as early as 1938.



**GENERAL
AMERICAN
TRANSPORTATION
CORPORATION**

135 South La Salle Street • Chicago 90, Illinois

TOFC:

Standards and Equipment

"Piggyback" is probably the most exciting traffic development on the railroads today. Articles in this issue tell a story of tremendous growth—both in the number of railroads participating and in the volume of traffic itself.

In the movement of trailers on flat cars, the railroads are wholly uninhibited. Their attitude of "let's try" has no limit. The road-by-road survey in this issue describes a complicated range of services, of rates and of interchange arrangements which may leave the casual reader bewildered. This is all to the good. A channeling of TOFC into a strait jacket at this time would freeze design, suppress experimentation and perhaps keep the roads from profiting from a top traffic potential yet hardly dreamed of.

It is significant that both Plan I (sold to shippers) and Plan II (sold to truckers) TOFC are flourishing. Contrary to the threats of certain truckers that they would not patronize the railroads offering a "competing" rail-billed TOFC service, at least three railroads currently offer both Plan I and Plan II service and enjoy consistent increases in both.

Perhaps the most noteworthy trend in TOFC in recent months has been the extension of interline service. A year ago interchange of trailers between railroads was unusual. Today it is common; practically every day brings announcements of new multi-road routes. Interline service brings headaches. The roads are finding that even minor differences in tie-down equipment and other appurtenances on both trailers and flat cars prevent fast and flexible interchange. At least one railroad now engaged in interline service finds that it has to maintain separate pools of cars and trailers for specific connecting roads.

It would appear that the principal problem right now is to decide to what extent standardization can be accepted immediately—for minor pieces of equipment, at great advantage in expense and in time. Certainly, such an agreement must not be allowed to stifle important further experiments in concepts of equipment for "marrying" highway and railroad transportation.

The railroads must eventually get around to

ascertaining a standard plan of per diem for trailers in interchange. Where a rate has been established, by individual agreement, it ranges from \$3.50 to \$5.

To be competitively salable, TOFC must be fast. Conventional railroad service is weakest at the interchange point. Unless the interlining of trailer-loaded freight cars is consistently faster than that now accorded the generality of freight, it probably is not going to attract much patronage.

At some complicated terminals like Chicago, roads have experimented with cross-town transfer over the streets. While this operation may save time under present conditions, it involves two expensive ramp operations, congests city streets, and increases opportunities for damage to lading. It is a poor substitute for expeditious interchange of the loaded freight cars by rail.

Thus far, TOFC has utilized conventional highway trailers of the over-the-road type and flat cars which are either standard in design or, if built especially for TOFC, are widely useful in other railroad services. The use of orthodox equipment probably has encouraged widespread experimentation in TOFC, because capital investment is easily withdrawable. Also, since TOFC traffic on some roads fluctuates widely, prudence dictates the use of a car which can be placed in other service.

However, as TOFC service becomes a permanent source of revenue, and extreme fluctuations in traffic are ironed out by holding loyal and consistent customers, the next big step may be to modify both car and the trailer in the direction of a "hermaphrodite" vehicle designed exclusively for TOFC service. At present, piggyback utilizes two separate vehicles, each with its own undercarriage, brakes and controls. When one of these is placed on top of the other, the result is waste of space, unnecessary weight, a relatively high center of gravity, and a tendency to clearance difficulties. Once the reluctance to commit capital to TOFC is overcome, may we not expect widespread experimentation with the so-called demountable or transferable container?

Railway Age's roundtable on the Modern Freight Car (November 14 issue) discussed the possibility that the future freight car may comprise a heavy-duty, long-life flat car—upon which is secured an inexpensive, freight-carrying body, easily replaced as shippers' requirements change. Why not merge two ideas and provide a container which can also be placed upon a highway trailer chassis? Given the means to transfer the body between car and trailer rapidly and cheaply, such a combination would be universally useful.



A LOOK AT TOFC SERVICE TODAY

"Piggybacking" Booms!

More roads, more routes, more volume—that's the current picture. Thirty-four roads, up 11 from a year ago, now provide service. Others are slated to come in shortly.

- **INTERCHANGE** grows rapidly. As new roads begin operations, early arrivals are expanding. One example: TOFC service now links East Coast cities with points as far away as San Antonio and Denver.
- **BIG PROBLEMS** are unsolved. Still a major one is whether to offer all-railroad service or handle common carrier trailers. A few roads do both. At least two experiment with handling shipper-owned trailers.
- **WHOSE RESPONSIBILITY?** Sixteen roads lodge the job in the Traffic Department; seven others, in the Operating Department. Some have joint offices. A few hand it to a truck company subsidiary or have other special arrangements.
- **LACK OF STANDARDIZATION**, particularly tie-down equipment, bothers many. One Western road has had to maintain a separate "pool" of cars for different connecting lines. Others interchange both car and trailer in interline movements. An AAR committee is at work on this problem.
- **TRAILER "PER DIEM"** is still another stumper. There's no pattern. Agreements worked out between individual roads vary widely. Leased trailers tend to take higher rates than railroad-owned units.
- **A SHIFT** of emphasis hits the flat car supply. Cars now on order or undergoing conversion push 1,000. Flats already in TOFC service exceed 3,000. Types vary widely, from cut-down gondolas to the 79-ft French-designed car.
- **SOLICITATION** plans vary from road-to-road. Now and then a specialist crops up, hired away from the trucking industry. Most roads still depend on regular sales forces.
- **TRAILER MANUFACTURERS** are gleeful. Some are working on special designs for the piggyback market. Freuhauf expects as much as 20% of 1956 production may go to railroads.
- **CHAMPION** piggybacker in 1955 is the Southern Pacific. That road handled 37,736 trailers in the first nine months. Runner-up: the New Haven, with 30,000.

"Piggybacking"—the Plan Is Growing

Eleven more roads have inaugurated TOFC service this year—Costs are sometimes high, but business is good and expansion's in the air

Piggybacking may not have come of age in 1955—but it has taken some healthy steps in that direction.

Railroads that entered the service only a few months ago are today handling, in some cases, thousands of trailers a month. A wide range of commodities move piggyback—a transportation medium that offers fast, dependable service and almost miraculous freedom from loss and damage.

Officers who supervise TOFC operations generally agree that piggyback service has proved itself a traffic-getter. And while high costs sometimes eat heavily into revenue, the service is, in most cases, making some contribution to overhead. The New Haven states that its Trailiner Service in the first nine months this year produced a gross of \$1.3 million.

Eleven new roads have been added to the piggyback roster this year. At least one more, the Missouri Pacific, will begin a similar service early in 1956. Two other roads are "on the fence" as they continue to study operations around the country.

Piggyback volume is up, too. The Southern Pacific, which had handled nearly 38,000 trailers by September 30, appears to be the year's champion "piggybacker."

Close behind is the New Haven (30,000). Nearly a year ago the New Haven discovered it was fast approaching a "saturation" point in its TOFC operation, and the road is now turning to extensive interline service in order to expand.

A Growing Business

Expansion, meanwhile, has virtually blanketed the map. Roads that entered into the service apparently with some timidity, generally handling only LCL, have published extensive truck-competitive rates. Such rates are now on the verge of further expansion, linking distant sections of the country with through rates and service.

New carriers entering the piggyback picture recently have limited themselves to all-railroad operations—competing with motor common carriers. Of the 34 major carriers presently offering TOFC service, only seven actually hold themselves out to transport common carrier trailers. At least two others do so, however, through truck company subsidiaries which interchange truck-billed freight with other truckers.

Interchange has increased, but not without complications. Standardization of equipment, or lack of it, is a

TESTS SHOW NEED TO CONTROL IMPACTS

- Trailers riding on flat cars are subject to substantially less shock on impact than the flat cars themselves.

- At 4 and 5 mph, load shifts in a trailer are heavier than presently believed. Lading such as sugar, steel, oil drums and other high density material must be blocked solidly, and the blocking fastened to the trailer floor if equipment and lading damage is to be prevented.

- Where a test flat car was allowed to roll into a backup car, rebound readings on impact recorders were as high or higher than the initial reading. This would simulate coupling up a train; and indications point to lading and equipment damage when the coupling is made at 4 to 6 mph.

- Tie-down equipment will not stand impacts in excess of 5 mph without damage to the trailer and its lading.

These findings resulted from a series of tests recently conducted by the Burlington at Galesburg, Ill. The road undertook to determine whether trailers loaded piggyback did, in fact, get less impact than the cars themselves. If so, how much less? How can tie-downs be changed to improve shock absorption? And what blocking of lading inside trailers is necessary or desirable?

To get the answers, a loaded trailer was placed on a flat car. This piggyback load was then struck by a coal car weighing 151,000 lb gross.

At 3 mph, the impact recorder showed Zone 3 on the flat car and Zone 2 on the trailer.

At 4.3 mph the recorder again registered Zone 3 and Zone 2 respectively; but at 4.5 mph the reading was Zone 4 on the car and Zone 3 on the trailer.

At 5.3 mph the impact recorder on the flat car read Zone 6 and on the trailer halfway in Zone 3. A backup car, weighing 171,700 lb gross, was standing a car length from the flat car. The flat car and its striking car rolled into this backup car at approximately 4 mph, and the load inside the trailer shifted, bulging the trailer doors badly. This occurred even though the trailer doors were protected with grain doors.

The next impact was at 5.7 mph, and the recorder read Zone 7 on the flat car and Zone 4 on the trailer. This time, no contact was made with the backup car, and the trailer lading was found to have shifted to the front of the trailer as a result of the impact. A crease was produced at the right front of the trailer, and some spot welds in a repaired section at the right front were pulled loose.

A final impact was made at 6.8 mph. The recorder registered Zone 9 on the car and Zone 7 on the trailer. The upper fifth wheel plate on the trailer was bent so the kingpin was approximately 10 deg from its normal position.

factor. Some railroad officers consider this their most critical problem. Tie-down devices vary widely, making it difficult or impossible in some cases to interchange trailers between railroads. Some roads turn over loaded flat cars in interchange, while others land the trailers, drive them across town and reload. It often depends on whether two roads have a close physical connection—as do the Santa Fe and the Nickel Plate at Chicago, for example, via the Illinois Northern.

Piggybacking does have its problems. The basic one is unchanged from a year ago—what kind of service to provide. But whether a railroad handles its own trailers, or those of motor common carriers, one thing is certain. Railroad officers are beginning to know more about the trucking business, about truck service, rates, solicitation methods and traffic.

They have found they can provide as dependable a service as the truck operator, with closer control over arrival times at destination.

There is a widespread and still-growing interest in actual operating practices of the truckers. For example, how do you best load a trailer, and what bracing of the load is needed to prevent damage-causing shifts in loading? Searching for answers to questions like this will probably develop a new appreciation, by both truck

companies and railroads, of the contribution each can make to overall transportation.

A new and still unsolved headache is the matter of per diem on trailers. Truck companies generally pay a high per diem on trailer units, up to \$8 a day, but they often get around it simply by exchanging trailers with each other. Railroads in TOFC service have not adopted this practice, but have worked out individual road-by-road arrangements—ranging from no per diem at all to as much as \$5 a day. Few steps seem to have been taken so far to find the answer to this question.

Equipment in today's piggyback service continues to increase as traffic grows. There are slightly more than 3,000 flat cars in the service, and around 3,500 trailers. Orders for new cars, or the conversion of existing cars, total close to 1,000. About half that many trailers are on the order books.

Mileage figures on piggyback equipment are virtually impossible to compile, but most officers connected with such operations believe the daily mileage averages well above that of conventional freight cars. J. P. Newell, vice-president of the PRR, said earlier this year that piggyback cars on his road will probably average over 200 miles a day, even after allowance is made for shorter hauls.

"PIGGYBACK": Who?--Where?--How?

Atchison, Topeka & Santa Fe

Handling rail-billed freight in what it calls a "conservative approach," the Santa Fe has extensive piggyback operations both in the Midwest and Far West.

Overnight service is offered between Chicago and Kansas City, with second-morning delivery between Chicago and principal points in Kansas and Oklahoma. Chicago-Denver and St. Louis-Denver service is also provided, the latter in conjunction with the Wabash.

In the Far West, TOFC service extends from the San Francisco Bay-Oakland area to Los Angeles, San Diego, and El Paso, including points in Arizona and New Mexico. Some LCL moves as a matter of carrier convenience, but generally the service is at truck-competitive rates.

Interchange arrangements are in effect with the Western Pacific-Great Northern via Stockton, Cal.; with the Wabash at Kansas City; and with five eastern carriers at Chicago. Interline movements via Chicago are on a combination of local rates over that point. Through rates to meet truck competition on specific commodities are under discussion.

The Santa Fe pays "per diem" on foreign trailers, ranging from \$3.25 to \$5.00 a day. Separate agreements are worked out with individual roads.

Expansion plans include extension between Chicago-Kansas City and all points in Kansas and Oklahoma; also through service, via Kansas City, between Chicago and major Texas cities.

G. B. Kelley, assistant to general freight traffic manager, Chicago, heads the Santa Fe service.

Baltimore & Ohio

"Tofcee" service on the B&O is an all-railroad operation, serving 13 major terminal cities—Baltimore, Pittsburgh, Philadelphia, Washington, D. C., Cincinnati, Indianapolis, Chicago, E. St. Louis-St. Louis, Louisville, Wheeling, Toledo, Youngstown and Cleveland. There are, in all, 88 city-to-city services, and in the first nine months of 1955 the road moved **1,797 trailerloads**.

The road handles only rail-billed trailerload freight at truck-competitive rates. The first interchange service, with the Chicago & North Western, will begin December 12. Other expansion plans include new city-to-city service to and from Cleveland and Youngstown, Ohio. Piggyback loads are moved generally in B&O "Time-Saver Service" trains.

Equipment in service includes 55 53-ft, 6-in. flat cars, 125 24-ft vans, 12 33-ft vans and 12 33-ft flat-bed trailers. On order are 30 additional flats and 30 flat-bed trailers.

J. C. McGohan, general freight traffic manager, is in charge of Tofcee service.

Canadian National

Piggyback mileage on the CNR now totals 445, fanning out from Montreal to London and to Toronto and



THE BEST "ECONOMIC DISTANCE" (top) of piggybacking is among the still unsettled questions. For example, the Santa Fe has faced severe highway competition between Los Angeles and San Diego. SOME EARLY USERS OF CNR (second from top) piggyback service between Montreal and Toronto jokingly complained that trailers were arriving before the mail telling what was coming. NEW INSULATED VANS, (third from top) at the Chicago ramp, give the C&EI more service to sell. The road has hired a man from the trucking industry who works full time in piggyback solicitation. CLEARANCE RESTRICTIONS (bottom) are increasingly important as piggyback interchange becomes more commonplace. Here a C&NW crew checks a pair of Nickel Plate trailers received at Chicago.

SPECIAL REPORT:

Hamilton. Trailers are railroad-owned, and the rail-billed loads move in regular manifest freights. Rates are truck-competitive, and begin at a minimum weight of 5,000 lb.

Volume has grown steadily, and in the January 1-September 30 period the CNR handled 6,368 trailerloads. Further expansion is under study. The road has 25 flat cars, 46 trailer vans and four open top trailers in the service.

W. H. Kyle, operating vice-president of the CNR's Central Region at Toronto, is in charge of TOFC service.

Canadian Pacific

Another "divided" operation, somewhat like the Santa Fe, with separate operations in the East and West. Present service is between Montreal-Toronto-Hamilton and Montreal-London in the East; and between most principal points in Western Canada.

The western TOFC operation is handled through a subsidiary, CP Transport Company, while all service out of Montreal is in railroad-owned trailers. The latter business is at truck-competitive rates with minimum weights matching those published by the Canadian National.

While no figures on 1955 volume are disclosed, the CPR has this **equipment** in service: 15 46-ft flats in the East, and eight 41-ft and 47 46-ft flats in the West. A total of 31 22-ft vans are in use in the East, while in the Western operation there are 110 trailers, ranging in size from 28 to 35 ft. Additional equipment is now on order.

Surveys are being made to determine future expansion; meanwhile, no interline business is handled. Officers in charge of the service are G. R. Jones, general superintendent, CP Express Company, Toronto; and R. E. Wilkes, manager and superintendent highway services, CP Transport Company, Winnipeg.

Chicago & Eastern Illinois

Operating between Chicago and St. Louis, and between Chicago-Evansville, Ind., the C&EI handles both railroad-owned and motor common carrier trailers. The latter accounted for about 35% of total volume in the first nine months of 1955.

Business in railroad-owned trailers includes both rail LCL and trailerloads moving on truck-competitive rates. In publishing the competitive tariff, the C&EI used not only motor common carrier rates but, in some instances, contract carrier rates as well. Business has climbed since the tariff was published.

Another C&EI innovation is a joint rail-motor tariff, applicable on aluminum ingots from Sandusky, Ohio, to St. Louis; and on aluminum castings from St. Louis to Fort Wayne, Ind., and Michigan points. Under this tariff, the C&EI and motor common carriers participate in a division of the through rate. Gross weights are furnished by shippers.

Total TOFC **volume** recently has averaged around 600 trailers a month. The road has 91 flat cars in service, including 50 newly completed 42-ft, 6-in. units. Trail-

LIST OF RAILWAY AGE TOFC ARTICLES IN 1955

Growing Piggyback Network, January 31, p 7
 A Piggyback Cost Cutter, February 21, p 53
 NH Sees Cut in Piggyback Costs, March 7, p 45
 PRR Begins New Piggyback Service, March 7, p 7
 Monon Calls It "Trailer-Maid," March 14, p 67
 Piggybacks: They Reduce Damage, April 11, p 52
 How to Cool a Piggyback, May 9, p 21
 "No More Dead Freight," June 20, p 84
 Pennsylvania Builds Special Terminals for "Truck-Trains," July 25, p 49
 TOFC—Helping Hand for Box Cars, August 8, p 46
 TOFC in Canada—It's Giving the Trucks a Run, September 26, p 32
 How Santa Fe Cools Piggybacks, October 17, p 37

ers are leased and total 64—vans, open tops, flat beds and insulated vans.

As with most roads, C&EI piggybacks move in regular freights. LCL loads to and from Dallas are handled in connection with the M-K-T at St. Louis. The C&EI also has interchanged business with the North Western at Chicago, the movement being between Minneapolis-St. Paul and Evansville. **Expansion** plans include joining with other roads in truck-competitive through service between Chicago and cities in the Southwest.

G. H. Van Swearingen, assistant to president, Chicago, is the officer in charge.

Chicago & North Western

Two men, Iver S. Olsen, assistant general freight traffic manager, and J. E. Gardner, superintendent of merchandise and highway operations, share a "consolidated" office in handling the C&NW's piggyback operations. A new sales department has been created to handle the service. Traffic specialists are located at Chicago, Milwaukee, Green Bay and the Twin Cities.

The C&NW began piggybacking its own LCL, later branched out by publishing quantity rates directly competitive with motor common carriers. The **volume** currently handled is around 75 trailers a day, and piggyback service is offered at some 41 on-line cities. A total of 175 converted flat cars are in use, along with 225 leased trailers. Twelve mechanically refrigerated trailers are in the service.

Expansion plans include new through service to the Southwest via St. Louis; and on December 12 the road expects to begin extensive interline operations with 10 Eastern roads—B&O, DL&W, LV, NKP, PRR, RDG, Wabash, WM, P&WV and Monon. Quantity rates for this new service (eastbound) were filed with the Western Trunk Lines Committee in October. Roads in the East are publishing westbound rates. More than 300 eastern destinations are involved.

Interline operations already are in effect at Benld, Ill.,

via the Litchfield & Madison to and from St. Louis; to and from Denver via the Union Pacific; and at Chicago with the C&EI, Monon, Nickel Plate and PRR.

The C&NW pioneered the handling of military explosives by piggyback, beginning last spring with the movement of smokeless powder from Badger, Wis., to Watson, Ind.

Chicago, Burlington & Quincy

"No air and no water, but if it's on the ground we've got it." That's how F. E. Sperry, assistant vice-president (operations) of the Burlington places piggybacking in his railroad's total transportation picture. Mr. Sperry, president of the subsidiary Burlington Truck Lines, heads the road's TOFC operations.

Burlington piggyback service is extensive, reaching most major cities on the railroad. Truck-competitive rates for rail-billed freight are in effect between Chicago-Omaha-Denver; Chicago-St. Paul; Chicago-Kansas City; and Kansas City-St. Louis. Some LCL moves piggyback.

In addition, the Burlington handles, for a flat charge, the trailers of its truck line subsidiary, i.e., truck-billed freight. This is the road's most extensive operation. Since the truck line interchanges with other motor common carriers, the Burlington, in effect, hauls some common carrier trailers. This kind of interchange business is solicited. However, the railroad itself does not hold out service to the common carriers. That decision is still "open."

Equipment in service includes 180 45-ft flat cars, with ten 75-ft units under construction at the road's Havelock, Neb., shops. Trailer equipment includes 400 new 35-ft "volume vans" built by Fruehauf. Fifty of these vans are refrigerator units, with Thermo-King cooling apparatus.

Railroad pickup and delivery service is handled under contract by the truck company subsidiary; and when using the subsidiary's trailers in its own TOFC service the railroad pays \$2.40 a day rental.

Present piggyback **volume** on the road runs around 50 trailers daily.

Future **expansion** plans include interchange with the GN and NP on movements to and from Northern Minne-



400 STAINLESS STEEL VANS, including 50 refrigerator units, have been acquired for use in Burlington piggyback service. The vans have up to 35% more capacity than the average freight-hauling trailers now on the highways.

SPECIAL REPORT:

sota and Dakota points; interchange with eastern carriers (B&O, PRR, Lackawanna-Nickel Plate), and interline service to and from the Southwest via Kansas City.

Chicago Great Western

Handling only the trailers of motor common carriers, the CGW's piggyback operation is one of the oldest in the country. It dates from July 1936. The road moved some **12,800 trailers**, including both loads and empties, in the first 10 months of 1955.

Terminal cities served are Chicago, St. Paul, Kansas City, Des Moines and Council Bluffs. The road handles motor common carrier trailers on a flat charge per trailer, but refers to the charge as a "division" of the motor carrier rate. Empties are returned for around 50% of the loaded rate.

Flat cars so far assigned to this service are mostly 53-ft units, and around 155 are assigned to the opera-



HOW TO LOAD a trailer and properly secure lading has become a matter of first importance on piggyback railroads. Note both rear and side doors in the GN trailer in foreground.



NO JACKS are used in the Illinois Central tie-down operation. Instead, a welded frame lifts up from car floor to support the front of loaded trailers. At destination, the tractor "knocks down" the hinged frame and attaches automatically to the trailer.

tion. The road has no immediate plans for expanding its service.

R. G. Hawkinson, freight traffic manager, Chicago, is in charge of the operation.

Chicago, Indianapolis & Louisville

Operating between Chicago (South Hammond, Ind.) and Louisville (New Albany, Ind.) and between Chicago and Indianapolis, the Monon's "Trailer Maid" service totals 386 route miles. **Equipment** in use includes 20 converted flat cars and a "basic fleet" of 30 trailers—8 open tops, 3 flat beds and 19 vans.

Some rail-billed LCL is moved in piggyback service, mostly north from Louisville. The major share of business, however, is the handling of trailerloads at truck-competitive rates. No common carrier or private trailers are hauled; both types of service are under study. There has been some limited interchange with the North Western at Chicago, largely on LCL destined to the C&NW freighthouse at Proviso Yard. Lately, there have been interline movements with the Nickel Plate at Linden, Ind., on machinery from the East to Louisville. In the Linden operation both the NKP car and trailer are run through to destination.

In the first nine months of 1955, the Monon's volume exceeded 1,100 trailerloads, and in looking ahead to future growth the road recently assigned an officer specifically to oversee this service. He's C. R. Phillips, manager of "Trailer Maid" operations, Chicago.

Delaware, Lackawanna & Western

With service to 26 major cities—some as distant as San Antonio, Tex., and Duluth, Minn.—as well as more than 130 other towns and municipalities in the East, Midwest, West and Southwest, the Lackawanna is part of the growing piggyback network. The road handled **5,143 trailers** between January 1 and September 30, 1955. Of this total, 972 were rail-billed LCL; the remainder was trailerload business handled at truck-competitive rates.

Piggyback operation on the DL&W totals 476 miles. The road has 200 40-ft flat cars in the service, and 189 trailers of all types. One hundred trailers are railroad owned; the remainder are leased. The road has 50 more

PIGGYBACK PROGRESS ON PRR

(MCC trailers handled)*

March	655
April	843
May	944
June	1,022
July	995
August	1,583
September	2,283
October	3,389

*Figures supplied by Rail-Trailer Company, Chicago



A FORK LIFT HELPS load an L&N TOTE trailer. Shipper dock space is seldom big enough to permit dropping off a trailer for pickup later; so swift loading is important to prevent tying up expensive tractors and drivers.



MOTOR COMMON CARRIERS are giving the Katy good business. The truckers pay flat charges to get their loaded trailers moved between pairs of cities. Likewise, they pay a flat rate to get an empty trailer returned to origin.

units on order, consisting of 25 dry freight vans, 15 insulated trailers and 10 open tops.

Interchange is with the Nickel Plate, Wabash and B&O at Buffalo. Interline movements with the B&O are on traffic to and from Pittsburgh. The Lackawanna also interchanges, at Hoboken, N.J., with the New York, Susquehanna & Western. This is on business to and from the Edgewater, N.J., area. Piggyback cars are handled in the road's symbol freight trains.

Expansion plans in prospect include service to additional areas west of Chicago and into New England via the New Haven. Interchange will be at Port Morris, N.J., with the Lehigh & Hudson River.

J. L. Barngrove, Jr., general traffic manager, New York, heads the Lackawanna's operation.

Erie

The Erie serves a total of 163 points on its line with piggybacks, embracing 985 miles of the railroad. The three major areas served are the New York-Jersey City-Weehawken-Newark area, the so-called Middle District (Cleveland-Youngstown-Warren-Hubbard and adjacent points), and Chicago. To handle the business the road has 50 75-ft flat cars and 76 leased trailer units—56 vans, 4 insulated vans, 14 open tops and 2 flat beds.

Up to October 1, the Erie in 1955 handled a total of **1,076 trailers** in TOFC service. These loads, which have moved in regular merchandise trains, have included such commodities as coffee, steel, sugar, peanuts, steel wire, varnish, machinery, soap and pipe.

Expansion plans now under consideration include service into New England via the New Haven and to territories west of Chicago. Also in the current picture is service to Akron, Ohio, and nearby points.

B. F. Conway, freight traffic manager at New York, is in charge of the Erie's piggyback service.

Great Northern

Delivery of ten trailers on order at mid-October will bring to 107 the number of trailers in piggyback service.

With these, and 75 flat cars (8 53-ft, and 67 53-ft, 6-in.), the road carries on TOFC operations covering more than 1,700 miles of the system.

In the first nine months of 1955, the road handled approximately **4,500 trailers**. Initial piggyback service on the GN was limited to LCL movements, but subsequent expansion has embraced a wide range of commodities to which truck-competitive rates apply.

Interchange is extensive—with the Burlington, North Western, and Soo in Lines East territory and with the Southern Pacific, Western Pacific and WP-Santa Fe in Lines West. Eastern interline movements are via the Twin Cities to Chicago and points in Wisconsin; the western operation is via Portland, Ore., with the SP and via Bieber, Cal., with WP-Santa Fe.

These SP and WP-Santa Fe connections are for destinations in Central and Southern California.

Future expansion is expected, but no specific plans are revealed. The road presently reaches 16 major on-line cities without TOFC service.

Heading the operation in the East is C. O. Hooker, general manager, Duluth, while western operations are under T. A. Jerrow, general manager, Seattle.

Illinois Central

A newcomer in the piggyback field, the IC hauled its first trailers on flat cars last June 30. Service was established initially between Chicago and Memphis, Tenn., and limited to rail LCL.

On October 1, the road placed in effect a TOFC tariff providing truck-competitive rates on a wide range of commodities.

While some business has been recaptured since that time, it is still too early to judge the effect of these new volume rates.

Overnight service is provided, with mid-morning arrival in Memphis on southbound movements.

The northbound train handling TOFC loads arrives at Chicago in the afternoon. Chicago-Memphis distance is 529 miles.

Equipment in service includes 16 converted 52 ft,

6-in. flat cars and 36 leased vans. Additional trailers are on order.

L. A. Schellenberger, general merchandise agent, Chicago, heads the IC operation.

Kansas City Southern

All points on this road are served by TOFC service. Loading and unloading ramps are located at Kansas City, Fort Smith, Shreveport, Beaumont, Dallas, and New Orleans. All first main track on the KCS—1,648 miles—is included.

In the first nine months of 1955, the road moved **1,148 trailers**. Its equipment includes 43 flat cars, 32 tandem vans and 11 tandem floats.

The KCS participates in various tariffs published by motor carrier freight bureaus in the Midwest and Southwest; and the road reveals that plans are under way to enter into further motor carrier tariffs. Under this arrangement, the road handles motor common carrier trailers in TOFC service.

On interline movements with the motor carriers the railroad participates in a division of the through rates—"the same as we do with railroads!" Thirteen cities and towns on the KCS are listed as interchange points.

Heading the KCS operation is E. O. Walters, assistant to general manager, Kansas City.

Lehigh Valley

Recent weeks have seen new **expansion** of this road's TOFC operation. Late in September, service was extended between metropolitan New York-New Jersey and 11 major points on the C&NW, including the Twin Cities. Routing is via LV-Nickel Plate-C&NW or LV-Wabash-C&NW.

Also new is an on-line operation between the metropolitan New York area and Buffalo-Niagara Falls. Plans for further growth include service to and from Fort Wayne, Ind., via LV-Wabash; Toledo, Ohio, via LV-NKP; and Louisville, Ky., via LV-NKP-Monon.

Since 1954, when it entered the field, the road has been piggybacking between the major terminals of New York, Chicago, Cleveland, St. Louis and Detroit. Service to and from these cities is via Nickel Plate or Wabash or both. Interchange with the Wabash is at Niagara Falls, with the Nickel Plate at Buffalo.

In the first nine months of this year, the LV moved **435 trailer loads**—199 eastbound and 236 westbound. This is rail-billed truckload freight at truck-competitive rates. The road has 27 53-ft, 6-in. converted flat cars in piggyback service, and trailers are leased as required to protect movements. Twenty-seven 33-ft trailers are on order, including 24 vans and 3 insulated units.

W. A. Grove, general freight traffic manager, New York, is in charge of the service.

Louisville & Nashville

Beginning August 15, the L&N initiated its piggyback operation (TOTE Service) between Louisville, Birmingham and New Orleans. For this 807-mile operation, the

road has equipped 16 46-ft, 9-in. flat cars, and acquired 30 trailers. A total of 14 additional flat cars are on order. Rail-billed trailerload freight is handled at motor competitive rates.

While the road feels it is still too early to comment on volume, it already has plans for **expanding "TOTE"** to and from Nashville, Tenn., and St. Louis-E. St. Louis. Commodities moved so far have included cigarettes, magazines, iron and steel articles, plumbing supplies, electrical appliances, paint, and canned goods.

Heading this new L&N undertaking is J. A. Parsons, assistant to freight traffic manager, Louisville.

Minneapolis & St. Louis

Latest arrival in the piggyback parade is the M&StL, which inaugurated service November 25, between Minneapolis-St. Paul and Peoria, Ill. The road has published motor competitive trailerload rates. To start the new operation, the road converted five 50-ft flat cars and leased 10 24-ft highway vans. The M&StL is negotiating with other carriers for the establishment of interline business between a number of major terminal cities.

Missouri-Kansas-Texas

Motor common carriers are the lifeline of the Katy piggyback operation. The road handles some rail-billed LCL as a matter of convenience and cost, but its volume business is from the highway operators. The road presently has 65 flat cars in TOFC service, aims to increase

TOFC BLOWS HOT AND COLD IN ALASKA

Piggybacking on the Alaska Railroad is an on-again, off-again operation—about five weeks each year during the breakup season.

"We have been in the business for three years. At the breakup every spring we handle the truckers' freight in piggyback vans, but we haven't been able to keep the business except in this period when they can't move over the highways," says Richard H. Bruce, superintendent of operations of the Alaska, at Anchorage.

Mr. Bruce, discussing his operation at the West Coast Superintendents' meeting, said his road is ordering 24-ft demountable vans, and will use "skeleton trailers and tractors" at Anchorage for pickup and delivery. These vans, he said, are better adapted to rail-water movements.

"We have 'let down and lift off' loading, instead of end loading, because the vans we haul arrive by boat," Mr. Bruce added. He said his road uses a pedestal for the fifth wheel, and the trailer is bolted through this to the flat car. At destination, the vans are lifted off with cranes.

"Our method of tie-down has really saved us money by getting away from cables and chains," he declared.

TOFC Today

this to around 100, and already is handling around **500 loaded trailers** a month.

Terminal cities served include St. Louis, Kansas City, Tulsa, Oklahoma City, and Dallas. The road has participated, jointly with the Santa Fe, in a Section 22 movement from Chicago to Parsons, Kan. This was the only volume "trailerload" rate published by the Katy until recently. Now the road plans to join Eastern and Mid-western rail carriers in a new through service to and from the Southwest. The Katy also expects to extend service to San Antonio.

In addition to the interline movement with the Santa Fe, the Katy has interchanged rail-billed LCL, in trailers, with the C&EI. To help build its motor common carrier business, the road has a "piggyback salesman" whose sole assignment is the solicitation of MCC business.

Since the predominant TOFC movement on the Katy is southbound, the road offers motor carriers a rate incentive for returns. Assuming a southbound charge of \$106.25 for a loaded trailer between two cities, the motor carrier can return his empty trailer northbound for \$35. Or, if he can get a load, his northbound charge is only \$50. Thus the Katy aids its customers in the unending battle for a return load.

Theo. F. Behler, vice-president and general manager, MK&T Transportation Co., Dallas, heads the Katy operation.

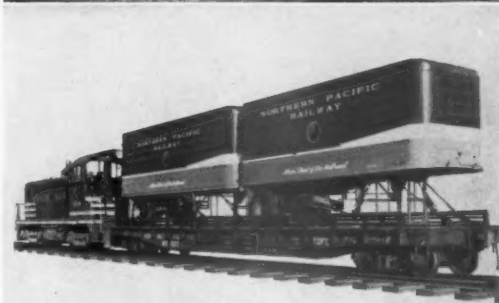
Missouri Pacific

Around January 1, the MP will begin a container operation—"a new slant of the so-called piggyback type of service"—between St. Louis and Kansas City. The road will use 32-ft containers, special truck chassis, and gantry cranes for truck-to-car and car-to-truck transfer. Container-load rates will be published (see page 53 for pictures and added details).

New York, Chicago & St. Louis

Strategic geographic location has been a factor in the rapidly expanding TOFC operation of the Nickel Plate. The road currently has interchange arrangements with 13 other railroads, and the New Haven will be added to the list December 20. Service is limited to rail-billed freight in NKP or other railroad-owned (or leased) trailers. Major on-line terminals served are Chicago, Toledo, Cleveland, Buffalo, and St. Louis-E. St. Louis.

Through interchange with the Lackawanna and Lehigh Valley, as well as with the Pittsburgh & West Virginia-Western Maryland-Reading, the Nickel Plate reaches such major eastern terminals as New York, Philadelphia and Baltimore. Via the C&NW, service is provided to and from a dozen points in Wisconsin, plus the Twin Cities. To and from Denver, piggybacks are handled either Santa Fe or C&NW-Union Pacific. A Wabash connection puts the NKP into Kansas City; while interchange with the Santa Fe provides service to and from points in Kansas and Oklahoma, including Kansas City. In conjunction with the Cotton Belt and Texas & New Orleans, the Nickel Plate reaches 21 cities in Arkansas, Texas and



INTERLINE BUSINESS (top) is a big item on the Nickel Plate. The NKP has interchange arrangements with 13 other roads, linking eastern cities with such distant points as Houston, San Antonio, Denver, and St. Paul-Minneapolis.

TWO TRAILERS (second from top) ride one of NP's 53-ft flat cars. The road states that it has "several plans" under consideration for expanding its piggyback operation.

LOADED TRAILERS (third from top) are weighed at the PRR's 47th street yard, Chicago, before moving to the piggyback ramp. The Rail-Trailer Company weighs all common carrier trailers before they are loaded on flat cars. Charges are assessed on the basis of gross weight of trailer and lading.

LINED UP (bottom) for the day's rush, these Pennsylvania flat cars are standing at the road's TrucTrain loading ramp at 47th street, Chicago. The PRR has a similar terminal at Kearny, N. J., to handle piggybacks moving in and out of the New York Metropolitan area.

Louisiana. Dallas is also reached via the Frisco; and Louisville, Ky., via the Monon.

Equipment in these extensive operations includes 45 flat cars and 55 owned trailers—10 open tops, 5 insulated vans, and 40 regular vans, five of which have side as well as rear doors. TOFC loads are handled in NKP symbol trains only. The road does not disclose figures on volume.

W. E. Erlenbach, general freight agent, Cleveland, is in charge of piggybacking on the Nickel Plate.

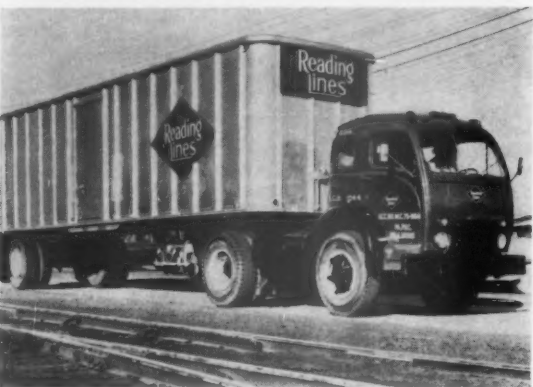
New York, New Haven & Hartford

With the volume to warrant such handling, the New Haven moves piggybacks in exclusive trailer trains; and this year, up to October 1, the road handled approximately **30,000 trailers**.

Business is **expanding**. On December 20 the road plans to inaugurate new interline service with the Erie, Nickel Plate and Wabash—the latter two lines through the medium of the Lehigh Valley and the Lackawanna. This new service will be between the general areas of Boston and Providence in the East, and cities in CFA territory—Cleveland, Akron, Detroit, Fort Wayne, Chicago, and E. St. Louis-St. Louis—in the Midwest.



BRIDGE ROAD in an East-West piggyback operation, the P&WV handled 316 trailers in the first nine months of 1955. The road is part of a 4-road link between the Philadelphia-Baltimore area and the Midwest.



SUBSTITUTED SERVICE around its two piggyback terminal areas of Philadelphia and Reading, enable the Reading to serve about 225 stations on the railroad. Only rail-billed freight is handled in the Reading's operation, and traffic lately has averaged about 50 trailers monthly.

While around 90% of present New Haven piggyback business comes from motor common carriers, the new interline service will be strictly competitive with motor carriers. Volume trailerload rates are being published by the railroad which will be competitive in every respect with over-the-road operators. Having approached the saturation point with its original service, this road's venture into interline business is an avenue for further growth.

TOFC equipment on the New Haven includes 400 specially constructed 40-ft flat cars. An additional 500 "new concept" cars, 79½-ft long, are on order. The road formerly had no need for trailers, but now is acquiring 60 to 75 tandem-axle units.

E. V. Murphy, assistant vice-president, New Haven, is the officer in charge.

Norfolk & Western

Beginning November 14, the N&W began piggybacking common carrier trailers in interline movements with the Pennsylvania. The service is between New York-Philadelphia and Bristol, Va., and Roanoke. Interchange point is Hagerstown, Md.

This operation marks the first interline handling of common carrier trailers by railroads. The operation is being coordinated by Rail-Trailer Company, Chicago, the firm that has been working this operation on the PRR. Initially, the N&W is moving piggyback cars in regular fast freights. It **plans**, as volume develops, to run solid trailer trains between Bristol and Kearny, N.J., terminal point for the PRR's New York operation.

Northern Pacific

Handling only railroad-owned trailers in piggyback service, the NP operation tallies up, altogether, to 817 miles. Service is offered between the Twin Cities and Duluth-Superior, and between the Twin Cities and Fargo, N.D. In the Far West, service is between Seattle-Tacoma-Portland as well as between Everett and Hoquiam, Wash., and California points, via Portland and the SP.

Equipment in service includes 40 53-ft, 6-in. flat cars, and 50 trailers, including 48 vans and 2 flat racks. Plans for **expanding** piggyback service, including more interchange with the SP, are under consideration, and it is expected that more equipment will be required.

While volume figures are not revealed, the NP has handled a wide variety of commodities. Rail-billed trailerloads move at truck-competitive rates. Some perishable traffic has been handled TOFC, with refrigeration provided by dry or natural ice.

Traffic aspects of the operation are under Otto Kopp, general freight traffic manager, St. Paul, while operating matters are handled by C. R. Opsahl, general manager, NP Transport Company, St. Paul.

Pennsylvania

The PRR is the largest practitioner to be engaged simultaneously in two major plans of piggybacking. Through the medium of the Rail-Trailer Company, Chi-

TOFC Today



NOTE THE "SHOCKS." The Frisco's tie-down equipment makes use of these shock absorbers to dampen any impact from switching or over-the-road movement.



DETAIL OF AREA between two piggyback cars shows handbrake wheel recessed in car floor. This clears way for car-to-car "bridging" in loading and unloading trailers.

cago, the road handles motor common carrier trailers—**volume** exceeded 3,300 trailers in October. At the same time, the PRR has its own extensive "TrucTrain" service for rail-billed freight at truck competitive rates—volume around 1,400 trailers in October. The MCC operation reaches the terminal areas of New York, Chicago, Philadelphia, Pittsburgh and St. Louis; the railroad's own operation also includes Cincinnati, Louisville, Indianapolis and the Wheeling, W. Va.-Steubenville, Ohio, area.

Piggyback **equipment** on the PRR consists of 400 specially built 75-ft flat cars, with an additional 100 under construction. Most of these cars are used in the common carrier operation. Approximately 90 49-ft, 3-in. flats are available for use in the road's own service.

Two special trains, TT-1 and TT-2, operate between New York and Chicago. These 50-car trains, with two trailers per car, frequently run to capacity. The MCC trailers are handled by the PRR on a flat charge per trailer. Rail-Trailer handles solicitation of the truck operators, and performs the terminal tasks of loading and tying down trailers.

Interchange has been, until recently, limited to the road's own rail-billed "TrucTrain" service. These inter-line movements have been via C&NW and Santa Fe at Chicago. On November 14, the road began a new interchange arrangement on common carrier traffic at Hagerstown, Md., with the N&W.

Heading the PRR's piggyback operations are H. C. Kohout, manager of TrucTrain service, and C. S. Van Gunten, manager of TrucTrain sales. Both are at Philadelphia.

Pittsburgh & West Virginia

The P&WV serves as a 112-mile bridge line in a through piggyback service between Philadelphia-Baltimore and Chicago, St. Louis and Minneapolis. Other roads in this operation are the Reading, Western Maryland, and Nickel Plate—the P&WV interchanging with the WM at Connellsville, Pa., and with the NKP at Pitts-

burgh Junction, Ohio. In the first nine months of 1955, a total of **316 trailers** moved via the P&WV.

Equipment in service includes 5 flat cars and five closed trailers (one insulated). An open top trailer is on order. All TOFC traffic on the P&WV is rail-billed trailer-load business, moving at charges competitive with motor carriers. Commodities handled have included candy, linoleum, tile, bottle caps, chemicals and carpeting.

Charles A. Thoma, vice-president—traffic, Pittsburgh, is in charge of the P&WV service.

Reading

Part of a 4-road chain that provides TOFC service between Philadelphia-Camden-Reading and numerous cities in the Midwest, the Reading, since July, has been averaging around 50 trailerloads monthly. The road has no local piggyback operations, but interchanges all traffic with the Western Maryland at Lurgan, Pa. Only rail-billed freight is handled.

Midwestern cities served include St. Louis-E. St. Louis, Toledo, Chicago, and numerous points on the C&NW. Although Reading ramps are located only at Philadelphia and Reading, the road serves some 225 on-line points through the medium of substituted service.

Specific plans for **expanding** the Reading operation are not disclosed. However, the road expects to acquire eight additional open-top 33-ft trailers and equip eight additional flat cars. Present equipment consists of 28 flat cars, mostly 47-ft units, and 31 van trailers. Piggyback cars move in regular merchandise trains.

Officer in charge of the Reading operation is A. N. Jewell, general manager, Reading, Pa.

St. Louis-San Francisco

Piggyback service began on the Frisco last summer, between St. Louis-E. St. Louis and Irving, Tex. (Dallas and Fort Worth), and between Kansas City and Irving. The operation was expanded in October to include the

SPECIAL REPORT:



OVERNIGHT SERVICE between the Twin Cities and Neenah-Menasha and Appleton, Wis., is provided by the Soo Line. The road generally loads two 24-ft vans on its 53-ft flat cars.



TYING DOWN TRAILERS is a speedy job on the Southern Pacific. Cables are used in lieu of chains. The SP system has 1,044 trailers equipped for piggyback service, with an additional 58 units on order. Currently this road is the No. 1 TOFC operator, and more expansion is in prospect, including extensive interchange arrangements.

intermediate cities of Tulsa and Oklahoma City. First-morning delivery now is provided to Tulsa, second-morning to Irving.

Motor competitive rates have been published for trailerload movements. In addition, the Frisco handles trailers of the Frisco Transportation Company, a subsidiary, "on a mileage basis." Figures on volume are not disclosed.

The road began its TOFC operation with 15 42-ft flat cars, and has just converted (December 1) another 20. Twenty trailers have been leased from the highway subsidiary, and others will be obtained as needed. The road has developed a portable precast concrete loading ramp for its operation. Pickup and delivery service is performed by Frisco Transportation, except at Fort Worth, where the subsidiary has no operating rights.

Expansion plans call for development of additional interchange business, including Chicago-St. Louis-Memphis with the Wabash. The road will participate in a proposed tariff covering through business from Western Trunk Line points to the Southwest. Also in negotiation is a piggyback tariff on commodities moving between present TOFC cities on the Frisco and points on the Southern Pacific (T&NO). The road presently interchanges some business with the Nickel Plate at St. Louis.

J. E. Gilliland, vice-president—traffic, St. Louis, heads the Frisco operation.

St. Louis Southwestern

With 1,130 miles of piggyback service, the Cotton Belt, in the first nine months this year, handled approximately **1,900 trailers**. Piggyback service is offered between St. Louis-E. St. Louis and points in Arkansas, Louisiana and Texas—to both Cotton Belt and SP (T&NO) destinations. The road handles rail-billed freight in its own trailers, as well as the trailers of its subsidiary, Southwestern Transportation Company.

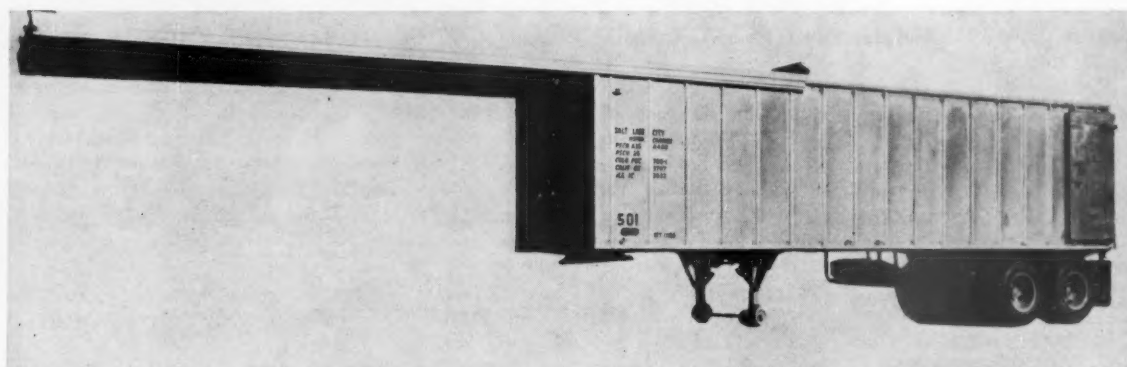
Equipment in the Cotton Belt operation consists of 60 40-ft flat cars and trailers leased from the motor carrier subsidiary. The road has plans for expanding its TOFC service to include traffic from and to Chicago and other points in WTL territory; also from and to selected points in CFA territory.

Piggyback traffic is interchanged at Shreveport, La., and Corsicana, Tex., with the Texas-Louisiana Lines of the SP. The road also interchanges with the Nickel Plate via St. Louis.

Heading the Cotton Belt's operation is J. L. Cook, general traffic manager, St. Louis.

Soo Line

A relatively modest operation so far, the Soo provides overnight piggyback service on the 273-mile segment between Neenah-Menasha-Appleton, Wis., and Minneapolis-St. Paul. The road currently is using four 53-ft flat cars, and employs eight van trailers. Rail-billed freight is handled at truck-competitive rates, and the road has not been interchanging with other roads. The principal commodity handled has been paper. Plans for future expan-



BALANCING EQUIPMENT may be easier with this sliding-roof van made by the Strick Company, Philadelphia. The Western Maryland has ordered two of these units (33-ft)

sion of the TOFC service are at present under consideration.

K. H. Peterson, supervisor Rail-Van Service, Minneapolis, heads the Soo operation.

Southern Pacific

Operating more than 7,500 miles of piggyback routes (Pacific Lines: 3,237 mi; Texas and Louisiana: 4,291 mi), the SP is currently the nation's leading "piggybacker." Even with a three weeks' Teamsters' union strike on the West Coast early last summer, the SP system handled **37,736 trailers** in the first nine months of 1955.

Piggyback service blankets most of the SP system—major terminals from Portland, Ore., to New Orleans. There is extensive interchange with the UP (via Wells, Nev., Ogden, Utah, and Portland), and with the GN and

and the SP, a dozen. SP will use them where iron and steel articles necessitate overhead loading, and commodities moving in return loads require closed vans.

NP (via Portland). This interline traffic moves under joint rate and equipment interchange arrangements.

Texas and Louisiana Lines interchange with the Cotton Belt at Corsicana, Tex., and Shreveport, La.

More **expansion** is ahead. On the Pacific Lines, service will be extended, around January 1, to points east of Portland—Yakima, Walla Walla and Spokane, Wash.; Lewiston, Ida., and Pendleton, Ore. This will be in connection with the NP and UP.

In Texas and Louisiana, a new tariff has just become effective, providing piggyback rates via the Cotton Belt between St. Louis and all points on the T&NO from Lafayette, La., to Spofford-Eagle Pass, Tex. Also in the picture are new trailerload rates between points in Texas and Louisiana and points north and east of St. Louis.

Negotiations with the Frisco are under way for a tariff on commodities moving TOFC between Texas-Louisiana

PIGGYBACK AND THE REGULATORS

In the year since *Railway Age's* last review of the piggyback picture (December 13, 1954) the following actions, or results of actions, of the various regulatory bodies have been reported in this paper's news columns:

The Interstate Commerce Commission suspended a tariff proposed by the Chicago & Eastern Illinois which gave railroad shippers an allowance of 18.5 cents for picking up and delivering their own trailers (*Railway Age*, February 21, page 9). In addition, the railroad proposed to return-haul the shippers' trailers free.

ICC approved the service and rates of the Baltimore & Ohio; Delaware, Lackawanna & Western; Erie; Nickel Plate; Pennsylvania; and Wabash. Tariffs had been under investigation since June 1954 (*Railway Age*, August 1, page 5).

ICC cancelled the C&EI tariff mentioned above on the ground that the railroad had failed to show the allowance "just and reasonable." Also, the commission said that trailers are analogous to returnable

containers, which when returned are subject to individual rates (*Railway Age*, August 29, page 9).

ICC cancelled DL&W tariff providing for a charge of \$10 for split pick-ups. At the same time the commission refused to permit an additional stop for loading foodstuffs moving between New York and Chicago (*Railway Age*, August 29, page 11).

Canada's Board of Transport Commissioners permitted the Canadian National and Canadian Pacific to put into effect an unusual piggyback tariff (*Railway Age*, September 26, page 32) which provided:

1. All-commodity rates (truck competitive) on shipments with minimum weights ranging from 5-15,000 lb;

2. All-commodity rates on the same commodities in the provision mentioned above, but with minima ranging from 20-24,000 lb;

3. Commodity rates, including some on products covered in 1 and 2 (above), with minima beginning at 20-24,000 lb. Rates apply only on box car shipments and are designed to make the piggyback shipper turn to box cars. These graduated rates tell the shipper, in effect: ship light, ship piggyback; ship heavy, ship box car. (*Railway Age*, September 26, page 32).

Lines territory and Oklahoma City-Tulsa and St. Louis-Kansas City.

Equipment in service consists of 193 53-ft, 6-in. flat cars on Pacific Lines; plus 58 40-ft, 10-in. flats and 17 53-ft, 6-in. flats on T&NO. There are 1,044 trailers in service (795, Pacific Lines; 249, Texas and Louisiana).

The SP announced on November 17 an order for 250 new "specially designed" piggyback cars. An additional 15 40-ft, 10-in. cars are being equipped for TOFC service on the T&NO; and 14 trailers (8 vans, 6 open tops) are on order. Pacific Lines have 44 trailers (18 vans, 26 racks) on order.

Trailerload truck-competitive rates are in effect on the SP. The road also handles substantial quantities of rail-billed LCL in piggyback service. Only railroad-owned trailers are handled on Pacific Lines, but in Texas and Louisiana, the trailers of SP Transport Company, a highway subsidiary, are also moved piggyback. TOFC cars are handled in regular manifest trains of the T&NO, but on the Pacific Lines there are regular piggyback trains.

Heading this extensive operation is P. M. Chaimov, manager, freight protection, merchandise and station service, San Francisco; and, on Texas and Louisiana Lines, L. A. Brockwell, freight traffic manager, Houston, and G. D. Clark, vice-president and general manager, SP Transport Company, Houston.

Texas & Pacific

An experiment involving the movement of shipper-owned trailers in piggyback service began last summer on the T&P. The operation is between Fort Worth and Odessa, Tex., and a more complete description appears on page 52.

Union Pacific

Since beginning a limited "Trailer Freight" service between Los Angeles and Las Vegas, Nev., in August 1953, the UP has expanded the operation until it covers

some 2,500 miles of the railroad. Service is provided between West Coast cities (Los Angeles and San Francisco areas, among others) and a large number of towns and cities in Utah, Idaho, eastern Oregon and western Wyoming. Other operations provide piggyback service between Idaho-Utah points and the Pacific Northwest.

Interchange with the SP is at Wells, Nev., Ogden, Utah, and Portland. In its eastern district, the UP participates in through TOFC service between Chicago-St. Louis and Denver. Interchange is with the C&NW at Council Bluffs; with the Wabash at Kansas City. A recent innovation is the handling of shipper-owned trailers between Omaha and Kearney, Neb.

Only rail-billed freight is handled on the UP. Truck-competitive trailerload rates are in effect generally. Figures on the volume of trailers handled have not been made public.

Equipment includes both 42-ft and 52-ft cars converted for TOFC service. Trailers include flat beds, vans and insulated vans—the flat beds being used in handling steel from Geneva, Utah, and the West Coast. Some of the flat bed units have been provided with stakes and side boards, making them available for return loading of such commodities as roofing, machinery, lumber and pipe. Balancing the East-West movement between Utah-Idaho and the West Coast has received much attention in the UP operation.

C. C. Weedon, general freight traffic manager, Omaha, is in charge of the UP's TOFC service.

Wabash

With present volume ranging as high as 35 trailers a day (slightly above 700 in October), the Wabash has a growing TOFC operation. The road serves eight major on-line terminals and either now has or plans to interchange with nine other piggyback roads. Between 20 and 25% of present volume is interline business.

Trailerloads are handled at truck-competitive rates. To a limited extent for carrier convenience, rail-billed LCL also moves piggyback. **Equipment** in service includes 70 53-ft, 6-in. flats that were converted and 20 specially built 75-ft cars. The trailer fleet consists of 55 railroad-owned and 15 leased units. The road recently ordered 60 more trailers (30 vans, 30 open tops) for TOFC service.

Via connecting lines, the Wabash reaches as far East as New York and west to Denver. For the latter city, traffic is interchanged at Kansas City with both the UP and Santa Fe. Present connections to the East are the Lackawanna and Lehigh Valley. Both cars and trailers are interchanged with these four roads.

Expansion plans now taking shape include service between St. Louis or points east and Omaha-Des Moines. Service between C&NW points and Detroit-Buffalo and East will begin December 12. The road also expects to establish, in combination with the Katy, Frisco, Cotton Belt and T&NO, through service between Chicago-Fort Wayne-Detroit, Buffalo-Toledo and cities in the Southwest. Still another expansion plan in prospect is Chicago-St. Louis-Memphis interline traffic with the Frisco. There is also in prospect a Twin Cities-to-Southwest service,



BACKING A TRAILER into place on flat car is a job for experts. An 8-car cut is about maximum for loading at one time. Here, a UP driver gets directions from a man on the ground.

TOFC Today



THREE PORTABLE RAMPS are used in the Wabash operation. These ramps have been popular on several roads because they permit added flexibility in unloading and, in some cases, eliminate turning cars at destination.

moving M&StL-Wabash to connecting roads at St. Louis. Interline movements to and from Boston-Providence areas on the New Haven will begin December 20.

Handling TOFC service on the Wabash is W. G. Duchek, merchandise agent, St. Louis.

Western Maryland

Serving Baltimore and nearby Sparrows Point, Md., as well as York-Hanover-Spring Grove, Pa., the WM participates in an east-west piggyback operation inaugurated originally with the Reading-P&WV-Nickel Plate. Interchange with the Reading is at Lurgan, Pa., and with the P&WV at Connellsville. Interline traffic now extends beyond Chicago—to and from Denver, via C&NW-UP; to and from 13 C&NW cities north and northwest of Chicago, and to and from a dozen Kansas-Oklahoma cities on the Santa Fe. Service is also provided via P&WV-Nickel Plate, to and from Toledo, Chicago and St. Louis.

Rail-billed trailerload freight is handled at truck-competitive rates and minimum weights.

Present flat car **equipment** consists of 17 53-ft, 6-in. cars (140,000-lb capacity, with roller bearings). Four additional cars of this size are being converted. The road uses 17 32-ft vans, including two insulated units. It also has two 32-ft open tops. On order are two 33-ft sliding roof type trailers which can be used for overhead loading and unloading.

The WM does not reveal figures on trailer volume, and makes no comment on future expansion plans. TOFC loads move exclusively in symbol freight trains.

W. M. Weinacht, Rail-Truck traffic manager, Baltimore, heads the operation.

Western Pacific

With a 410-mile piggyback operation, the WP serves directly six major cities in Northern California—San Francisco, Oakland, San Leandro, San Jose, Stockton and Sacramento. The road also participates in joint opera-



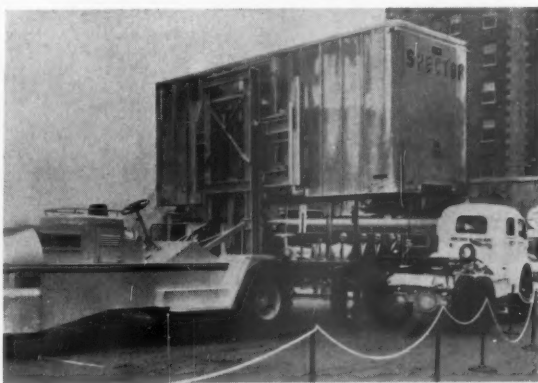
FLAT CARS USED in piggyback service on the Western Maryland are equipped with roller bearings. While other roads have roller-bearing cars in the service, the practice is still not universal.

tion with the GN and Santa Fe, connecting California points and the Pacific Northwest. Interchange with the Santa Fe is at Stockton, and with the GN at Bieber.

Only rail-billed freight is handled, with truck-competitive rates on trailerloads. Since the service was inaugurated only recently, shipments are still considered experimental. WP surveys have indicated, however, that up to 20-million lb of freight per month is available for piggyback solicitation between California and the Northwest. Commodities moving TOFC at present include paper products, beer, bakery goods, machinery, merchandise.

Surveys are being made as to possible expansion of the WP operation. **Equipment** in service consists of 10 56-ft flat cars and 22 dry-freight vans including four 35-ft units. Six more trailers are on order.

G. S. Allen, superintendent of transportation, San Francisco, heads the WP operation.



LATEST CANDIDATE in the container race is this 21-ft, 6-in. dry freight unit developed and sold by Clark Equipment Company and Fruehauf Trailer Company. Specter Freight System, a motor common carrier, has ordered 32 of the "Mobilvans." The extruded post aluminum containers have a capacity of 1,330 cu ft, and are handled with fork-lift equipment. They can be secured to a flat car or truck chassis by an automatic latching mechanism (*Railway Age*, February 21, page 53).

Private Trucks Are Handled, Too

Big meat packing firm is moving its shipper-owned trailers on two Western roads, doing its own loading and unloading



LOADED with fresh meat (top) from the Fort Worth plant, an Armour trailer is spotted on T&P flat car for the 320-mile trip to food stores in Odessa, Tex. All trailers are shipper-owned.

ANCHORING of trailer (center) to flat car follows usual pattern. A rubber mat above the jack (arrow) helps absorb vibration, and mechanical cooling units move without mishap.

LANDING of trailers (bottom) at destination is handled by Armour drivers and tractors. Pickup and delivery costs have been eliminated by the railroad in this "private piggyback" operation.

As "piggyback" service continued its rapid growth in 1955, shippers owning their own truck fleets edged into the picture.

Armour & Co., one of the nation's major meat packers, instituted a new service, first in Texas with the Texas & Pacific, and then in Nebraska with the Union Pacific. Both operations involve the movement of Armour-owned trailers on flat cars.

Armour began its first "piggyback" experiment early last summer between Fort Worth and Odessa, Tex. On this 320-mile run, the company soon found that "piggybacking" reduces loading and unloading work, cuts wear on motor vehicles and results in delivery of product in better condition. The service has been, in the words of one Armour spokesman, "perfect, with no damage at all."

The tariff covering the Texas operation calls for the use of "shipper-owned equipment only"—two 18-ft trailers or one 34-ft trailer per flat car. Armour pays \$120 per loaded flat car from Fort Worth to Odessa, based on 30,000 lb exclusive of tare weight of trailers. Excess weight is calculated at 60 cents per 100. Empty trailers, meanwhile, are returned to origin at \$60 per car, with this return rate contingent upon a previous out-bound load.

Armour drivers at Fort Worth deliver the loaded trailers aboard the flat cars; at Odessa, they land the trailers before proceeding on their delivery routes. Railroad personnel handle the actual job of tying down and, at destination, untying the trailers. Overnight T&P service between Fort Worth and Odessa enables Armour to make necessary early-morning delivery to retail stores.

In the first few months of this new service, Armour has used only 18-ft stainless steel trailers. These are insulated vans, mechanically cooled by Thermo-King gasoline-powered compressor units. The tariff provides that refrigeration is a shipper responsibility, provided at shipper expense, and bills of lading are so endorsed (see pictures).

"Piggyback" service has, according to Armour, meant added business for the railroads. It is especially true with regard to the recently instituted Nebraska operation on the UP. Armour's meat traffic over this 186-mile segment between Omaha and Kearney previously moved entirely by highway.

The UP tariff covering the Omaha-Kearney service provides a rate of \$120 per flat car for loaded movement. The charge covers in this case, the return movement of the empty trailers. The maximum weight is 30,000 lb, exclusive of trailers, with any excess being charged at 35 cents per 100.

As is true of the T&P operation, the UP tariff provides also that shipments are to be loaded by the shipper on railroad-owned flat cars, and unloaded by consignee at destination. This same rule applies to the return movement of empty trailers.



A MODIFIED VERSION of this king-size 32-ft container will go into service on the Missouri Pacific around January 1. This pilot model, built in company shops at Sedalia, Mo., is shown on the special truck chassis, ready for highway movement.

MP's Answer: A Van-Size Container

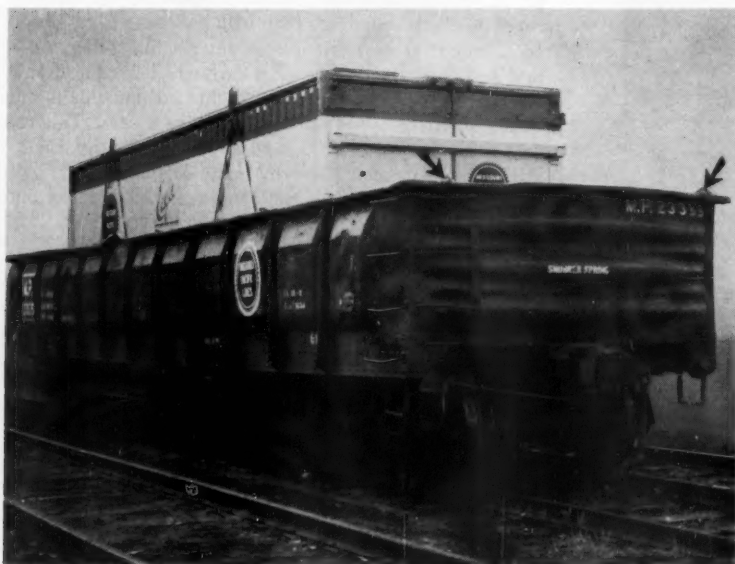
Planning new service between St. Louis and Kansas City, the Missouri Pacific seeks maximum flexibility—Gondolas will be used

The Missouri Pacific is planning to begin an experimental "box-back" operation between St. Louis and Kansas City around the first of the year (*Railway Age*, September 5, page 12). The road is building a half dozen 32-ft containers, and a like number of special truck chassis, with which to initiate the new service.

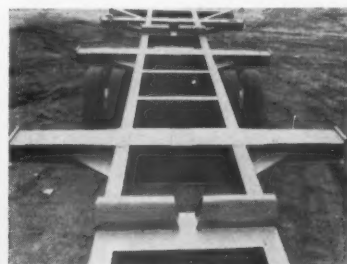
Gantry cranes at the terminal cities will be used to

shift containers from freight cars to highway carriers. Over-the-road movement of the containers will be in ordinary flat-bottom gondola cars, on which no special tie-down equipment is required. Pickup and delivery service will be handled by the MP Freight Transport Company, a subsidiary.

Shippers will be offered rates on a container-load basis.



TRANSFER FROM CHASSIS TO CAR will be effected with gantry cranes. The A frames will be replaced by a lifting device similar to the "grabs" used by an ice-man in handling blocks of ice. Note the hook arrangement (arrows). Attached to the container base with chains, the hooks prevent any back-and-forth movement of the container in the car. No other tie-down is required.



A SPECIAL CHASSIS, also built by the railroad, will be used to transport the containers in pickup and delivery service.

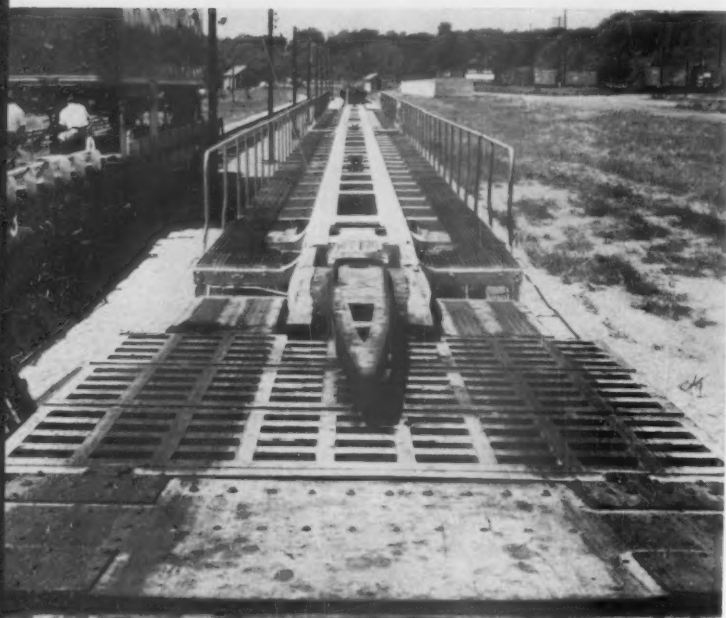


TIEDOWN DETAIL: This simple clamp device secures the container to the truck chassis for over-the-highway movement.

SPECIAL REPORT:

TOFC PROBLEM . . .

Why Terminal



A NEW CONCEPT CAR, based on a French invention but built in this country, was first ordered for piggyback service by the New Haven. The theory of rigid tie-down equipment is completely reversed by the use of absorbing devices and clamps. The hand-operated clamps fit into the flanged-wheel attachment mounted on trailer axle.



TIME CONSUMED in securing trailers on Piggy-Back, Inc., car is reported to be a matter of a few seconds for one man, who cranks the securing device, a part of the car, into its place in the dolly assembly which is fastened to the axle of the trailer, as in the center in this picture.

Piggyback terminal costs are high—and that situation may get worse before it gets better. That seems to be prevailing railroad opinion at the moment. These high costs were not entirely unexpected. Still railroad operating men, ever cost-conscious, want to knock down these expenses. And, at the moment, a half-dozen railroads have told *Railway Age*, a "flat" car especially designed for piggyback service appears to offer them many cost-reducing opportunities.

For the moment at least, many railroad operating people are most concerned about the costs of tractors and drivers used in trailer pick-up delivery service. On some of the shorter hauls this expense is taking over 50% of the average revenue per trailer. The railroaders aren't blaming the draymen particularly for this situation. The lack of adequate platform and other facilities at many patrons' places of business seems to be one big difficulty. It is commonplace for drivers to have to wait several hours before loading or unloading. Consequently, as one eastern operating officer said, the day when one driver can handle two trailers in an eight-hour day, or even in ten hours, is a red letter one.

Some railroad people have stated that when the railroads' piggyback volume got greater their tractor-driver costs for picking up the delivering trailers would start falling. But most men close to TOFC operations today think otherwise. With increased traffic at shipper docks they don't know how an already bad situation can improve, in the immediate future. Spokesmen of six railroads did say, however, that with the new Piggy-Back, Inc., flat car, tractor-driver costs for placing trailers on—and removing them from—flat cars will be reduced substantially. The New Haven has indicated that this is one of the main reasons it's going to use these cars. This car (*Railway Age*, March 7, page 45), designed by Piggy-Back, Inc., has been tested by many of the major piggyback roads. The New Haven, for one, has ordered 500 of them.

Switching Expense

Another of the main areas of out-of-pocket expense connected with TOFC operations is switching, particularly of cars loaded for outbound movement. And under present conditions as the number of cars loaded with trailers grows, the greater will be this expense. In the early days of each road's operation classification was not much of a problem because: (1) traffic was destined for only a few points; therefore (2) trailers were "switched" on the ground, so that yard or road switching was held to a minimum. Ground "switching" of trailers, however, was possible only because there were few.

Although the time required to load each trailer on a car was substantial, the total elapsed time for handling all of one day's loaded trailers was not great. Loading

Costs Are High

could be started and completed late in the day and proper train connections could be made. This ground switching made it possible to put trailers destined to one city on cars which were next to each other.

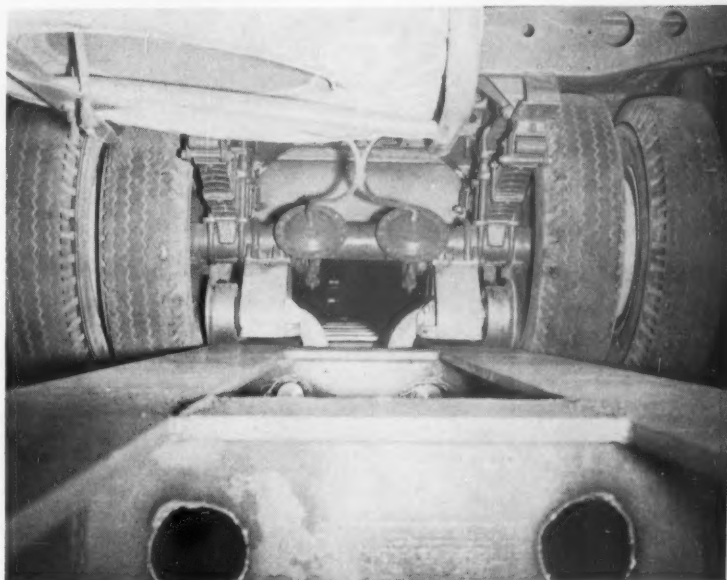
Presently, with the heavier volumes of traffic, loading of trailers on cars must begin earlier in the day. Frequently then, for example, on five cars in a string there may be trailers for five different cities, each city many miles distant from any of the others. This means a lot of yard switching in many cases, either to cut cars out for certain trains, or, more frequently now, to arrange them in proper order in a given train.

One of the advantages claimed for many well publicized—but still untried—schemes for side loading trailers on flats is that they would permit ground switching of trailers. According to three roads, the Piggy-Back, Inc., car also will permit this ground switching. One western railroad states that the time required to load—and tie down—a trailer on the “new concept” car was so short (just about a minute, the road reported) that it expected to do its switching “off-rail.” Actual switching costs in connection with TOFC reportedly will be cut by from 50-75% through use of the new car.

Costly Loading and Unloading

The most enthusiastic railroad piggybackers are unhappy about costs of loading and tying trailers on flats, and the unloading, too. The combined cost of loading and unloading a trailer, including tying down and untying, exclusive of the wages of a tractor driver and rental of the tractor, frequently may run as high as five dollars. Again, side loading has been suggested as a cost reducer and at least one of the largest operators of TOFC says it believes side loading is the ultimate answer.

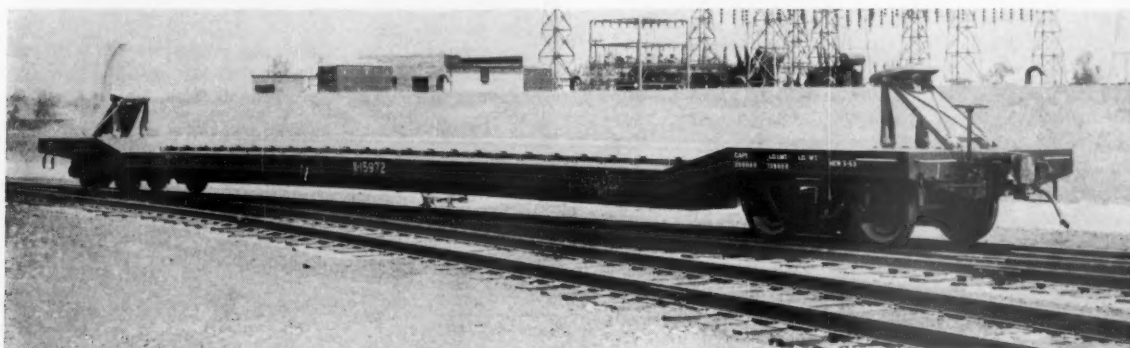
Meanwhile several roads are looking to new types of “circus loading” equipment to make possible large reductions in these expenses. Reducing them to half or two-thirds of present levels is the confident expect-



ONE CONTRIBUTOR to high terminal costs is the time required to tie down and untie trailers, after they have been loaded on flats.

tation of several roads. This, they say, is because: (1) the time required to back a trailer onto a car and disengage it from the truck is only a few seconds as opposed to the minutes required with circus-loading systems now in operation; (2) one man can tie down or replace a trailer in seconds, where under the present-day systems several men take many minutes to complete the job.

Apparently the cost of those elements of TOFC terminal operations over which the railroads have real control will be reduced substantially in the near future. If the railroads' expectations are realized, five dollars or more of additional profit per trailer will be gained. With the number of trailers handled daily skyrocketing, this overall gain will be far from insignificant.



SIDE LOADING, billed as one way to reduce terminal costs, hasn't yet caught on.



WAREHOUSE has sectional overhead doors in side walls. Roof is made of steel members covered with wood sheathing.

THIS NEW STATION PLANNED . . .

For Faster Freight Handling

Structure on ACL at Florence, S. C., replacing an outmoded facility, adjoins transfer sheds built several years ago

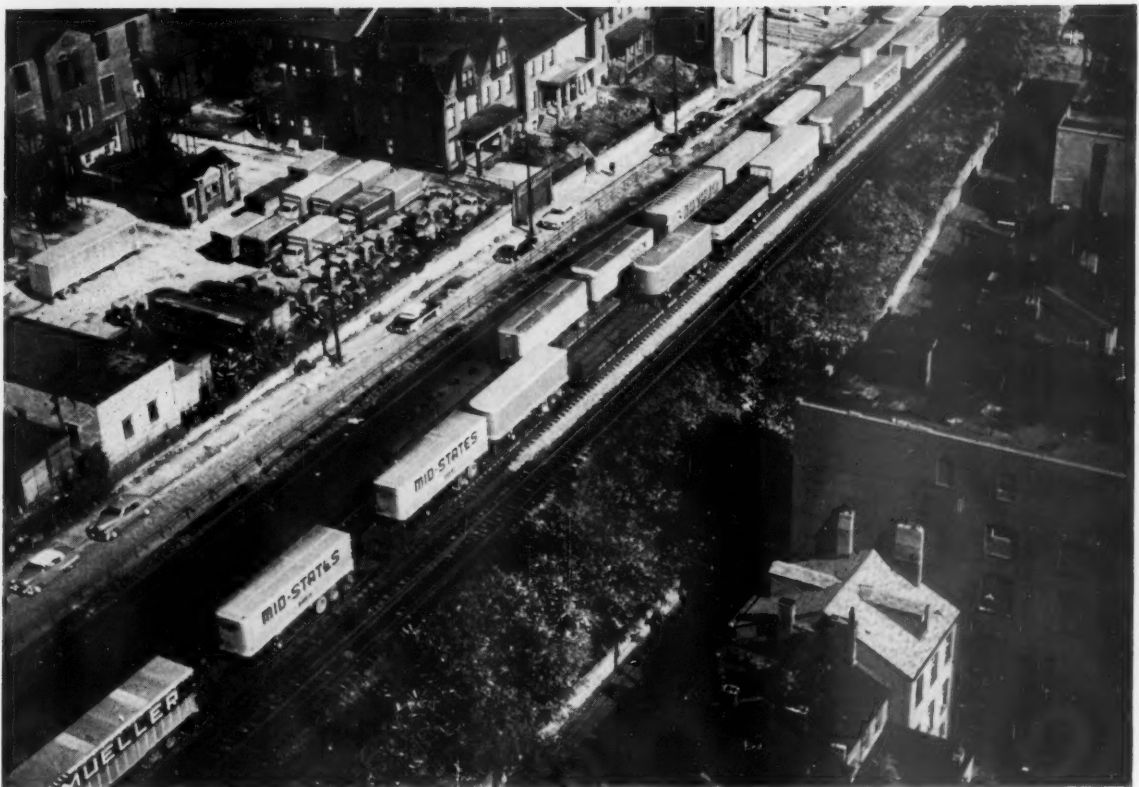
Modern materials and several unusual features of design characterize a new freight depot constructed by the Atlantic Coast Line at Florence, S. C., the new structure is another step in a series of improvements made by the road at that point for faster handling of merchandise.

Several years ago, the ACL built three long transfer sheds on Oakland avenue at Florence, which are served by eight tracks. At these sheds LCL shipments received at Florence are sorted and rerouted. Merchandise destined for nearby stations is transferred directly from cars to over-the-road trucks operated by the company. Construction of the transfer sheds is said to have speeded up materially the handling of merchandise. It is reported to be an unusual occurrence when a car of merchandise is not handled and cleared through the transfer within six hours.

Following construction of the transfer sheds, local freight business continued to be handled at a freighthouse which had become outdated in both construction and location. A logical step, therefore, was to construct a new freight depot of modern design and arrangement



OFFICE SECTION of new freight depot (left) is faced with "Jumbo" brick; warehouse section with corrugated asbestos sheets above reinforced concrete curtain walls.



Solid trainloads of motor common carrier trailers on the Pennsy.

CO-ORDINATION

of railroad and motor common carrier freight services.

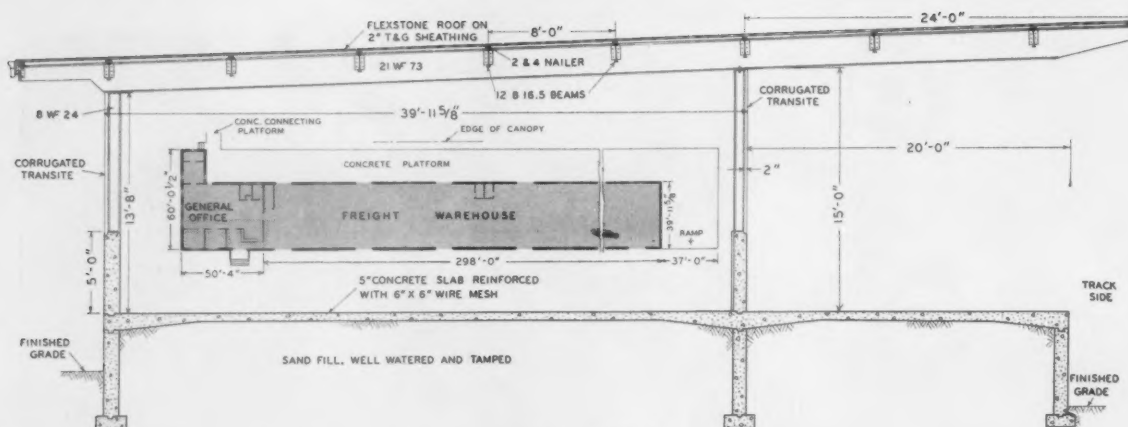
TERMINAL OPERATIONS ♦ EQUIPMENT LEASING

The Rail-Trailer Co.

228 N. LA SALLE ST., CHICAGO 1, ILLINOIS



Night view of Pennsy's TrucTrain terminal in Chicago. Rail-Trailer employees perform all loading and unloading operations here and at six other terminals on the P.R.R. and N. & W. railroads.



CANTILEVERED construction of canopy over track-side platform is shown by typical cross section. Inset shows general layout of the facility.

adjacent to the transfer sheds where the handling of local business can be correlated with the transfer operations.

The appearance and functional design of the new building reveals the use of modern materials chosen for durability, attractiveness, utility and ease of maintenance. While not pretentious, the structure is pleasing in appearance. It consists of a single-story office building at one end and a 40-ft by 300-ft warehouse. The outstanding design feature of the warehouse is that the steel roof beams extend 24 ft beyond the wall on the track side to provide support for a canopy over a platform 20 ft wide. Thus, the full width of the platform, being free of obstructing columns, is available for turning and passing mechanized freight-handling equipment.

Reinforced Concrete Walls

The walls of the freight warehouse are of reinforced concrete to a height of 5 ft above the floor. Above the 5-ft level they consist of corrugated asbestos siding. The door openings on the tailboard and track sides are fitted with wood sectional overhead doors.

Near the office end of the freight warehouse a connection is provided between its platform and the nearest transfer platform. At the opposite end of the freight-house platform, there is an open area and a ramp for easy vehicular loading. Not far away is a concrete end-loading ramp for special shipments requiring handling to or from open-end or flat-cars.

At regular intervals under the roof of the warehouse and over the loading platform are located thermostatically controlled fire detectors which activate an alarm at the building and also an alarm and an indicator panel at the Florence fire department. In a test run to determine the efficiency of the fire-fighting set-up, the fire department was on the spot within 1 min 40 sec after the alarm.

The office portion of the new building has a spacious general office which is adjoined by the offices of the freight agent and the merchandise supervisor, a file room, and an L-shaped service counter near the main entrance. This section is faced on the exterior with "jumbo" brick. Special features of the interior include the use of compressed cork floor tile, natural wood veneer



UNOBSTRUCTED platform on track side, 20 ft wide, affords ample space for operation of mechanized equipment.



GENERAL OFFICE has compressed cork floor tile, wood wall paneling and fluorescent lighting.

paneling for the wainscoting and some partitions, and fluorescent lights recessed in the ceiling. The service counter is also faced with the veneer paneling, and the counter top consists of marbelized Formica. The office section is completely air conditioned.

The new freight station was designed and built under the general supervision of R. L. Groover, chief engineer of the ACL.

More and more "RIBBONRAIL" SERVICE



year after year **BECAUSE...**

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Faster, higher quality production is continuing to reduce weld costs in spite of rising labor and material costs.

During the 18 year history of continuous rail, installation time and welding costs have constantly decreased . . . Hundreds of miles of this safe, trouble-free rail are already in service in all sections of the country, and major railroads are installing more all the time.

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Reduce your track, roadway, and rolling stock maintenance, and improve riding qualities. Look to LINDE, the leader in continuous rail welding, and plan for RIBBONRAIL Service now. Call or write the Railroad Department of Linde Air Products Company.

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Service Mark



RAILROAD DEPARTMENT
Linde Air Products Company
 A Division of Union Carbide and Carbon Corporation

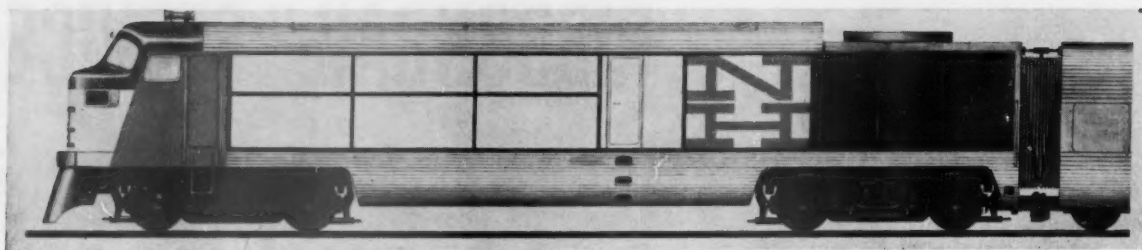
30 East 42nd Street **UCC** New York 17, N. Y.

Offices in Other Principal Cities

In Canada: LINDE AIR PRODUCTS COMPANY
 Division of Union Carbide Canada Limited, Toronto

Supplying to railroads the complete line of welding and cutting materials and modern methods furnished for over forty years under this familiar symbol . . .

"Linde" and "Oxweld" are trade-marks, and "Ribbonrail" is a service mark of Union Carbide and Carbon Corporation.



Twin Diesels for NH Talgos

Fairbanks-Morse "Speed Merchant" locomotives at front and rear of 5-car train, taking power either from engine or third-rail, will have 120-mph speed

The Talgo-type ACF lightweight train now under construction for the New Haven will be powered by two Fairbanks-Morse locomotives, one at each end of the train.

Specifications require that the locomotives be light in weight; have low center of gravity; have their own diesel power plants and also be capable of operation on 600-volt d-c third rail; have a maximum weight of 58,000 lb per driving axle; be capable of high-speed operation; and be adaptable to m-u operation. The 440-volt, 60-cycle, 3-phase power for train heating, cooling, lighting, etc., must be provided during both third-rail and diesel operation.

Since the diesel engine drives the head-end 60-cycle alternator, it must operate continuously at 350 rpm. The diesel engine drives the generator to supply power to the two traction motors as on a conventional diesel locomotive. The two locomotives being built will each produce at least 1,200 hp for the main generator for traction power and 350 hp for train power. Train load is 55 kw per "car."

Each Talgo-type train will have 5 "cars," with seats for 480 passengers. The train will be capable of maximum speeds approaching 120 mph and of high permissible speeds on normally restrictive curves.

Arrangement of Apparatus

Major components of equipment are shown in the block diagram of the locomotive. Inside the nose are the automatic air brake system equipment, cab signal warning devices, hot water cab heaters and number and marker lights. Behind the cab is the main cabinet for electrical control equipment. The two traction motors are mounted on the cab-end truck. Twenty-five per cent of the total train weight is on these two trucks.

Underneath the cab are two traction motor blowers. Harmful dirt, snow and water drops are removed from the air stream cooling the motors by a skimming principle, whereby a fraction of the total air blown is skimmed off the blower periphery and exhausted to atmosphere with heavy particles of air and water.

Under the cab roof are the engine-room blower and resistors. These blowers make it practicable to run the

train equally well in both directions. By taking air in at the roof and pushing it through air cleaners, it is expected that high dust concentrations at the rear of the train will cause no difficulties.

The 8-cylinder standard opposed-piston engine will drive a newly developed General Electric main generator. Ahead of the generator is an overriding clutch which will be closed for driving the a-c generator for car power, a 600-volt d-c generator for locomotive auxiliaries, and an amplidyne exciter. When the locomotive is receiving power from the third rail, the 600-volt d-c generator will act as a motor driving the alternator with the clutch disengaged. The locomotive auxiliaries will then be operated directly on third-rail power. The main generator will be disconnected.

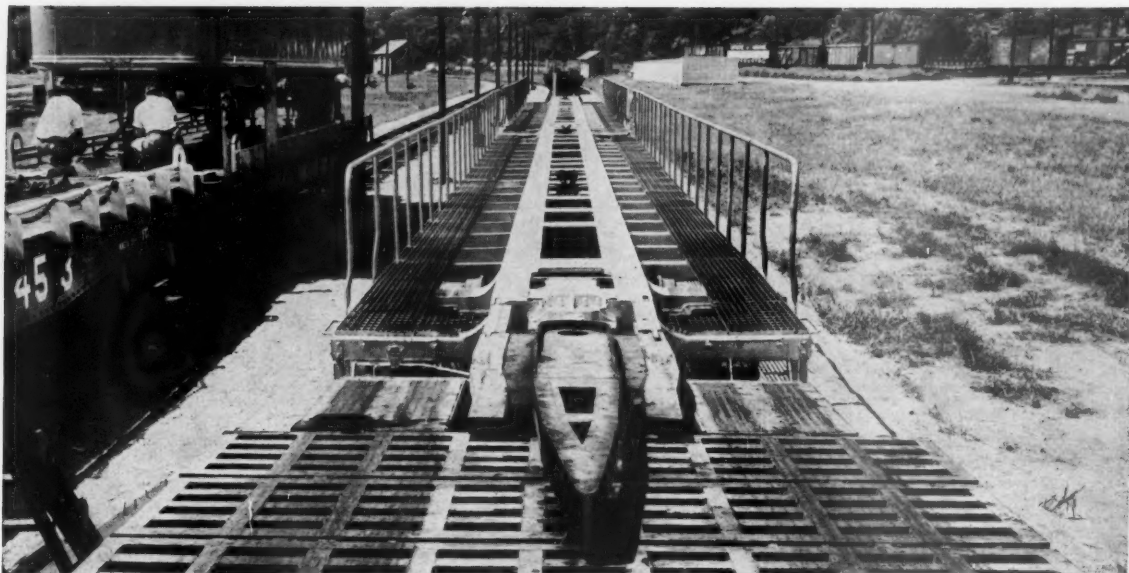
Back of the step on the roof line are the engine cooling system, a 600-gal fuel tank and the third rail acceleration resistors.

Special Coupler

At the rear of the locomotive unit is a special coupler for the ACF train. It is a tight-lock device with no vertical or angular displacement between couplers when joined. This permits using the coupler as an automatically connected conduit for two air lines, main train 3-phase power connection contacts and 42 control circuit contacts. The coupler will also serve as part of the steering mechanism for the first single axle on the train. Coupler height is 20 in. above the rail.

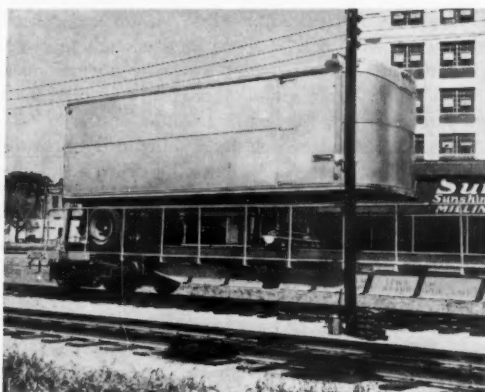
The truck is a new lightweight design. It has swing motion hangers and springs on the outside of the truck frame with mechanisms as wide as clearances will permit, thereby raising the center of rotation to approach pendulum action and increasing the antiroll stability of the spring system. Cross members at the ends of the truck frames have been eliminated to improve accessibility to traction motors and other equipment. The trucks are fitted with lightweight brake rigging and brake cylinders for use with the new "Cobra" brake shoes.

Present estimates indicate that for a fully loaded train there will be nominally 5.7 hp per ton available for traction and a maximum of 6.8 hp per ton. Estimated rates of acceleration indicate that the train can reach 60 mph



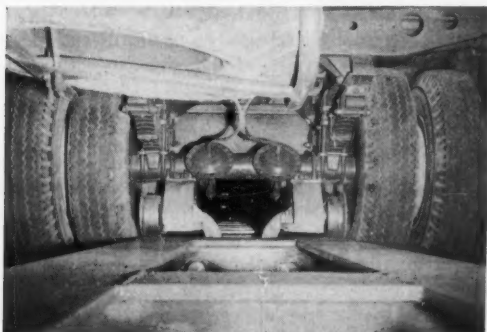
- Low cost lightweight flat cars—built for fast loading. 79½-ft. car weighs 49,000 lbs. compared to about 75,000 lbs. for conventional flat car of same length.

How to Cut T-O-F-C Costs 30–50%*



- Better clearances — trailer rides 8-in. lower. Tires do not touch catwalks.

- Fastest tie-down available. No jacks—no chains. 1-man — 1 min. as against about 6-men — 6-mins.



- Any standard trailer may be used and equipment affixed in 5-mins.

The Piggy-Back, Inc. system utilizing lightweight equipment provides a new concept of speedy handling—low terminal costs and reduced operating expenditures. Complete loading and tie-down time less than 1 min. with only 1 operator. Elastic shock absorbing tie-down eliminates jacks and chains and offers vital protection for trailer and lading. Low terminal investment—smaller ramps—no lift trucks. 500 Piggy-Back cars have been ordered and are being built.

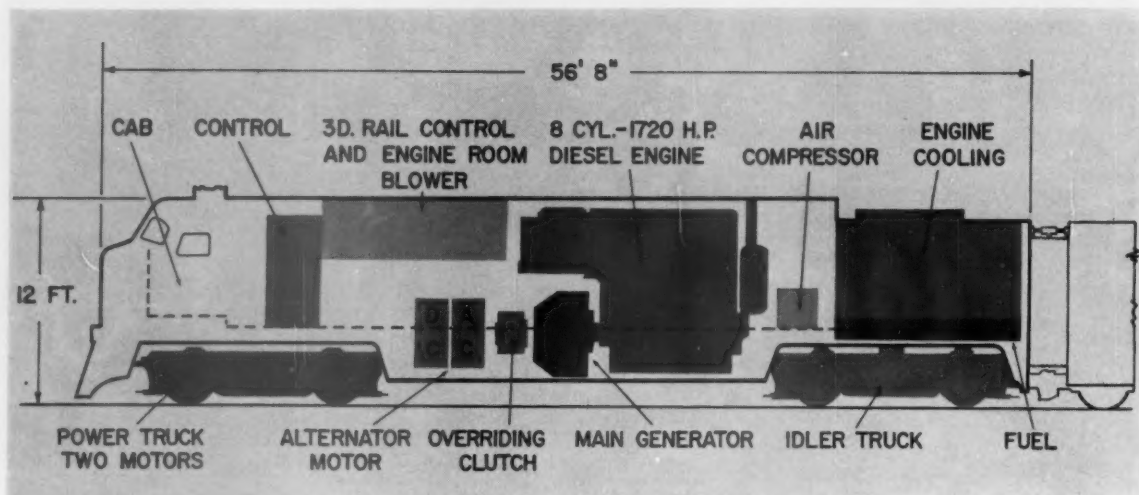
Write, wire or phone (HA. 2-9738) for full details.

* As one railroad (name on request) is doing.

PIGGY-BACK, Inc.
70 PINE ST., NEW YORK 5, N. Y.



- Major trailer builders also build special trailers.



Block diagram shows arrangement of the principal components of the locomotive.

in 2 min, 80 mph in $4\frac{1}{2}$ min, and 100 mph in 14 min.

Two GE-752 motors are used for traction on each locomotive. For third-rail applications, the standard motor is slightly modified by the addition of a ground return current path to bypass the 600-volt propulsion current around the locomotive journal bearings. Another addition is a flash ring assembly designed to protect the motor armature bearings by directing flashover currents to ground through the ring.

For diesel-electric operation, the traction motors are connected two in parallel on full and shunted field. The traction generator is a conventional separately excited, shunt-field machine with a series starting winding for cranking the engine from the battery. However, the means of excitation differs radically from that used on conventional diesel-electric locomotives. Because the diesel engine must operate continuously at full rated speed all control for traction must be provided in eight steps by field control through the amplidyne exciter.

When starting the train, the engineman operates a throttle handle in the conventional manner. The controller progressively increases the amplidyne excitation and, through its output, the main generator excitation.

For third-rail operation, the traction motors are connected two in series, full field only. Acceleration is by means of blown series resistors in 12 steps, all of which have ratings suitable for continuous operation. Using a motor-operated accelerating controller, notching is automatic, but under the control of the engineman, who may vary the rate of acceleration with the same throttle handle used for diesel-electric operation.

When operating from the third rail, ground protection is provided by a differential ground relay having two series coils, one carrying total current from the third rail and the other total ground current. If these are not equal, the relay will operate and trip the line breaker.

The same master controller is used for both diesel-electric and third-rail operation. The throttle handle has eight positions, as in the conventional diesel-electric, and there is a separate lever to control forward and reverse movement.

When transferring from third-rail to diesel-electric

power, the motor-alternator set will be running at between 850 and 900 rpm, and the throttle will be in one of the operating positions for third-rail power. The traction motors will be in series on full field. Preparatory to changing over, the diesel engine must be started by cranking with the main generator running as a series motor from the 75-volt battery. After the engine has started and operated at idle speed long enough to circulate oil and water, it is brought up to its normal operating speed of 850 rpm and is then ready to take load.

The engineman first moves the throttle handle to *Idle*, then throws a control switch from third-rail operation to diesel-electric operation. Among other things, this disconnects the large d-c motor from third-rail power. The motor-alternator set starts to slow down, but the moment its speed drops to 850 rpm, the free-wheeling clutch engages. This drives the d-c machine and the alternator, as well as the exciter and auxiliary generator, from the engine.

Power and auxiliary equipment circuits are switched by a multicontact transfer switch similar to the dynamic braking set-up switch frequently used on conventional diesel-electric locomotives. Circuits are interlocked so that no change can take place until the throttle has been moved to *Idle*. This assures a smooth transfer under the control of the engineman. As the throttle is advanced after transfer, it controls the excitation of the main generator.

In changing from diesel-electric to third-rail operation, essentially the reverse of the above procedure is followed.

Auxiliaries

Included in the locomotive auxiliaries are a radiator and resistor cooling fan motor, two traction motor blower motors, a pressurizing fan motor, and an air compressor motor. With the exception of the pressurizing fan motor, these must all operate from both diesel-electric and third-rail power. When operating from diesel-electric power, these motors are fed from the large d-c machine attached to the alternator which acts as a 600-volt generator with constant field. Thus this machine

West Charlotte Senior High School,
Charlotte, N. C.
Graves & Toy, Architects.
Mechanical Engineers Inc., Heating
Engineers.

Youngstown's Yoloy Pipe is shown in
the process of being installed. In a radi-
ant heating system like this, the pipe
must be good as it's put there to stay.



YOUNGSTOWN YOLOY PIPE chosen for radiant heating system at West Charlotte High School

This handsome school won a First Award in the 1955 School Executive magazine competition. It also won an A.I.A. Award of Merit. Justifiably, too, as it is the result of years of planning by a group of Charlotte's educators and architects.

How fitting that far-sighted civic leaders like this chose Youngstown's Yoloy Pipe for the radiant heating system. For, Youngstown Yoloy is a low alloy steel that is especially resistant to corrosion and shock. Made only of the finest steel, with additions of nickel and copper to give it those desirable extra qualities. Youngstown's Yoloy Pipe is controlled by its sole producer from ore mine to the final operation. Yoloy Continuous Weld Pipe is used most economically in many industrial and snow removal systems as well as in train pipe installations.

Having problems?

For further information write for our free booklet "The ABC of Yoloy Continuous Weld Pipe and its corrosion resistance".

Youngstown



THE YOUNGSTOWN SHEET AND TUBE COMPANY

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SHEETS - STRIP - PLATES - STANDARD PIPE - LINE PIPE - OIL COUNTRY TUBULAR GOODS - CONDUIT AND EMT -
MECHANICAL TUBING - COLD FINISHED BARS - HOT ROLLED BARS - WIRE - HOT ROLLED RODS - COKE
TIN PLATE - ELECTROLYTIC TIN PLATE - BLACK PLATE - RAILROAD TRACK SPIKES - MINE ROOF BOLTS

does double duty, since it also acts as a driving motor for the alternator when running from third-rail power. This unusual arrangement of the auxiliaries has a two-fold advantage. First, it places useful load on this machine at all times. Second, it assures that the commutator is carrying current during diesel-electric operation. This is most desirable for the purpose of reducing friction between the brushes and the commutator.

Train auxiliaries, such as fluorescent and incandescent lighting, heating, air conditioning, ventilating motors, etc., are designed for operation at nominal 440 volts, 3-phase 60 cycles. This power is readily possible on third-rail power by using a motor running at 720, 900 or 1,200 rpm. When diesel-driven, however, the alternator has to run at 850 rpm, with a corresponding frequency of 56.7 cycles. To operate inductive devices rated at 60 cycles on this reduced frequency, but on rated voltage, would result in higher than normal current consumption and possible shortening of life because of overheating. To prevent this, the nominal voltage of the a-c system was dropped in proportion to the frequency—from 440 to 415 volts—for both third-rail and diesel-electric operation.

The system is so laid out that the alternator operates with fixed field. This means that, for any given load, voltage and frequency vary together as the alternator speed varies within limits when operating on third-rail power. The result is essentially constant current in the

fluorescent lamp circuits and near rated current values in the motors. Although the speed of all induction motors is about 5.5 per cent below normal, this is of no great significance since, in general, this slight reduction in speed can be compensated by suitable pulley ratios, fan design, or application margin.

Train-Line Circuits

Since train-line power is supplied from both locomotives, provision is made to prevent connections that would parallel the two alternators. This is done by installing a train-line switch in each car. The switch in each car that opens the power lines between couplers has a set of auxiliary contacts used to control the contactors in the locomotives. The operating coil of the locomotive contactor is energized through a control train line and a normally closed auxiliary contact on one of the car switches. This means that a car switch must be open before the contactor can be closed.

Details about these locomotives were revealed by V. F. Dowden, electrical engineer of the New Haven, Robert Aldag, manager sales engineering, Railroad Division, Fairbanks, Morse & Co., and F. L. Sahlmann, of the Locomotive and Car Equipment of General Electric Company, in papers presented at a recent meeting of the New York section of the American Institute of Electrical Engineers.

UP ORDERS 15 . . .

8,500-Hp Turbine Locomotives

The Union Pacific has ordered 15 8,500-hp gas turbine-electric locomotives from the General Electric Company and has expressed intent of ordering two additional lots of 15 locomotives each. Total cost of these 45 locomotives would be in excess of \$38,000,000.

Currently the Union Pacific has a fleet of 25 gas turbine-electric locomotives in service, all built by General Electric, but of 4,500 hp.

The new locomotives will be built in two sections (permanently coupled together) with an engineman's cab at one end. A fuel tender will be coupled behind the locomotive. Geared for freight service, they will have a top speed of 65 mph and will weigh 408 tons on 12 axles.

Overall length with the fuel tender will be 165 ft 8½ in., and height will be 16 ft 2 in. Over pulling faces the locomotive is 119 ft 2¾ in. long, and wheelbase is 108 ft.

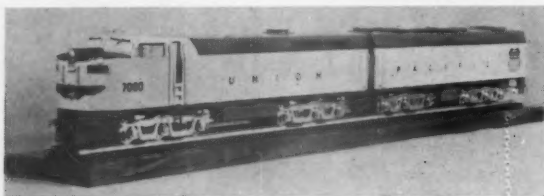
Gas turbine-electric locomotives pack a large amount of power into a comparatively small space, require no water, have fewer moving parts than other types of similar horsepower, and use low cost treated bunker C oil as fuel.

The fuel tenders for the locomotives are being built by the Union Pacific. They are used to keep the weight of the locomotive on the driving wheels constant instead of varying as the fuel is consumed. The fuel tenders will be 46 ft 5½ in. long.

The locomotives will be built at the Erie, Pa., works of General Electric, and they are scheduled for delivery at a rate of two a month beginning in 18 months.

The front section of the locomotive houses the auxiliary diesel engine (used for hostling and switching) and most of the auxiliary equipment. The rear section houses the gas turbine power plant and associated equipment.

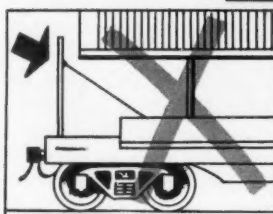
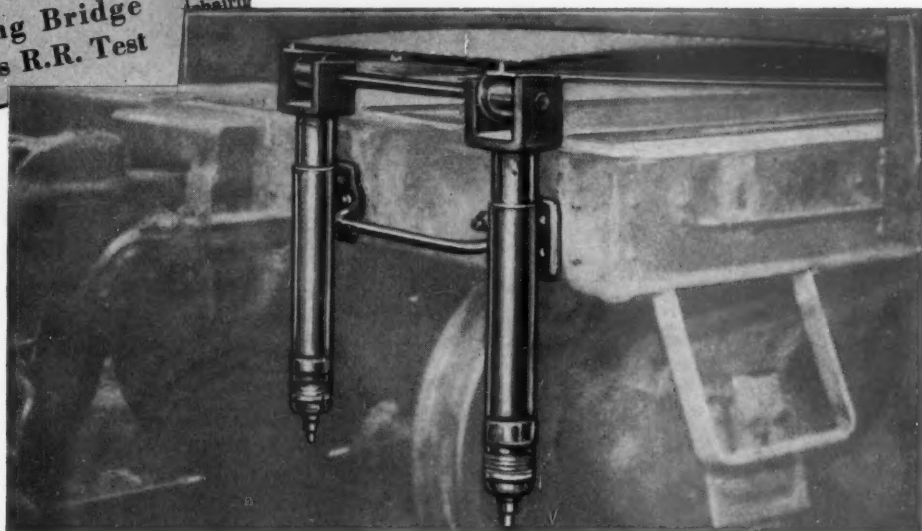
For starting a diesel-driven auxiliary generator set furnishes power to a main generator which cranks the turbine. After the generator gets the turbine up to a certain speed, diesel fuel oil is fed into the burners. When all burners are firing properly and are up to tempera-



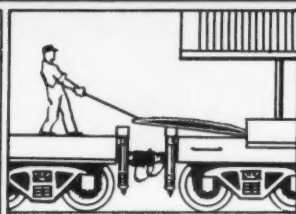
Model of the latest version of the gas turbine locomotives.



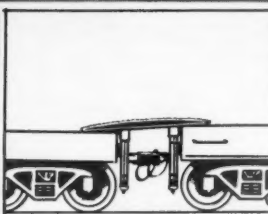
The RUSSELL Sliding Bridge for better T.O.F.C. efficiency



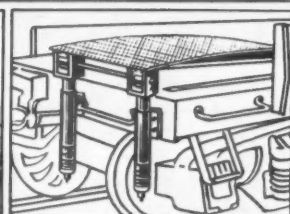
Nothing to lift; cannot fall or fly adrift.



One man operation; safer than hinged bridges.



Self-adjusts to various car heights. Visible safety lock.



Can be installed in any standard wood deck flat car.

THE Russell P-B Bridge, under service tests with an Eastern road, is the "better piggy-back bridge" operating men have long demanded. Better because it has none of the faults of hinged bridges commonly in use.

For safety reasons alone, the Russell P-B Bridge justifies itself. Lifting or lowering a heavy hinged bridge subjects two men to strain and possible hazard, especially under ice conditions. And, propped in upright position by rods or hooks, there is constant danger of its being shaken free or even cast adrift. (There is record of a hinged bridge falling into the path of a locomotive on an adjacent track.)

In contrast, the Russell P-B Bridge slides on rollers which run on a depressed track in the car

deck, and is easily pulled across the gap by one man, using a hook that is provided.

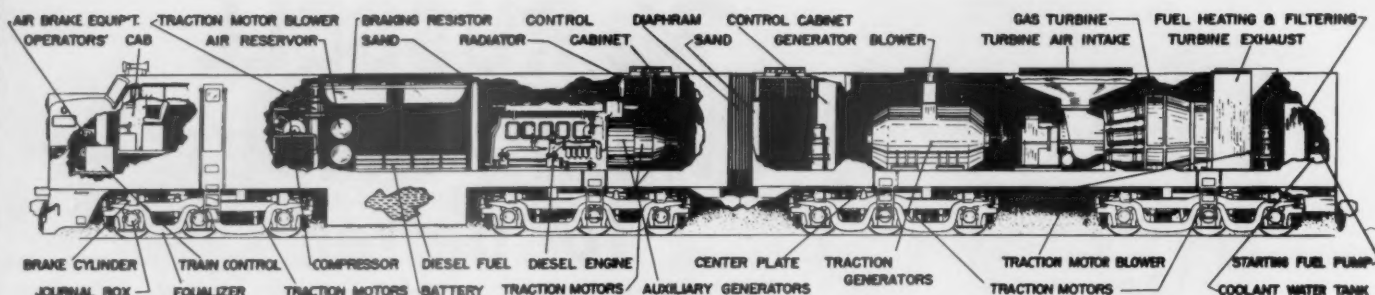
Spring-loaded rollers at ends of both cars compensate for height variations as great as seven inches. Under the weight of trailer or tractor, these rollers "give" until bridge rests solidly upon car deck.

The Russell P-B Bridge is secured, open or closed, by an easily-operated lock with visual indicator. Though light (288 pounds), its girder construction gives it strength and stiffness. A non-skid plate provides safe traction.

Installation in existing or new flat cars may be done by carbuilders or company shops. Ask to see dramatic action shots and details of present Russell P-B Bridge operation.

R. E. RUSSELL & CO.

Hughesville, Pa.



Block diagram showing arrangement of apparatus in the two cabs.

ture, preheated treated bunker C oil is fed into the burners and the diesel fuel cuts out.

Air is taken in near the roof, compressed and mixed with fuel. The mixture is ignited, and burned in the gas turbine power plant. The turbine is connected through reduction gears to electric generators which supply power to the driving motors on the axles. These motors then turn the wheels of the locomotive.

Design Improvements

Improved accessibility, easier maintenance, a simple traction motor ventilating system, and improved arrangement of traction motor cables are expected in the new units because they employ a simplified running gear having four 3-axle trucks. In addition, two extra feet of height will be available for the apparatus cab.

Reliability will be increased and maintenance reduced by the elimination of the steam generator. Also, the main water tank, booster pump, condensate receiver tank, flash tank, blow down tank, train lines, and orifices will no longer be required.

As compared to a diesel, the UP expects increased reliability and decreased maintenance to result from a simplified control and mechanical system which has fewer pieces of mechanical apparatus, fewer electric machines, and less control devices and contacts than a 7,000-hp, 4-unit diesel-electric.

As compared to earlier turbine locomotives, reduced turbine idle speed with improved idling fuel rate will be obtained through the use of a heavy-duty, locomotive-type diesel engine which handles all auxiliary load, thus

eliminating two auxiliary alternators driven by the turbine and much switching control equipment.

Generator insulation life should be increased and the possibility of flashovers greatly reduced by positive ventilation of the sealed main generator compartment with clean, dry air. Greatly improved accessibility and consequent decrease in maintenance labor will be gained by eliminating some apparatus, improving the arrangement of other equipment and providing additional equipment space.

Treated bunker C fuel oil will be supplied from the tender, which has a capacity of 24,000 gal. The fuel is heated before it is placed aboard the tender, which is insulated with glass wool to keep the fuel warm for long periods of time.

Gas Turbine Design Advances

A new combustion chamber for the gas turbine is expected to provide longer life and lower maintenance cost. The chambers have increased length and have been designed to be as accessible as possible for lower maintenance cost. Additionally, the cross fire tubes will be easily removable.

The fly-ball type mechanical governor used successfully in thousands of steam turbines will be employed to provide simplicity of operation, long life, reliability, easy adjustment, and low maintenance cost.

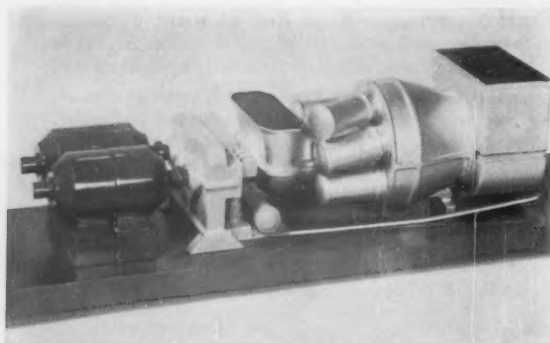
Simplified maintenance and high reliability are expected from the use of a gear pump and flow divider fuel system. Highly reliable, economical operation together with improved fuel combustion should result from the improved combustion chamber and fuel nozzle design.

All of these advancements are designed to permit the new locomotive to operate reliably at low cost.

Operating Costs

Comparing the new gas turbine-electric locomotive, producing 8,500 hp, with 7,500 hp diesel-electric units, it is estimated that the turbine will have approximately 25 per cent less mechanical repair cost. It is further estimated that the turbine locomotive will show economies in electrical, mechanical and power plant repairs. In fuel consumption the diesel-electric will show an advantage, but, based on horsepower and fuel prices, the cost is expected to be about equal. Even on lubricants and wages, the new gas turbine-electric is expected to show advantages over comparable diesel-electric units.

A comparison based on thousand gross-ton-miles per (Continued on page 72)



Model of one of the power plants which will develop 10,700 hp at 1,000 ft elevation and 80 deg F. ambient temperature.

Top-notch
**RAIL TRANSPORT
 BY THE
 TRAILER-LOAD**



A SERVICE WITH LONGER REACH!

Modern, heavy-duty trailers pick up a full load right at your plant platform.

PICK-UP WITH ONE STOWING!

Loaded trailers drive from your plant right onto specially equipped B&O flat-cars—fastening the loaded trailers securely is done in a matter of minutes.



SPEED AND DEPENDABILITY!

Trailers travel on B&O fast freights, maintaining precise all-weather schedules between a growing list of important cities.

DOOR DELIVERY, TOO!

With no delay, trailers are driven off their flat-car-berths directly to the consignee's plant or store.



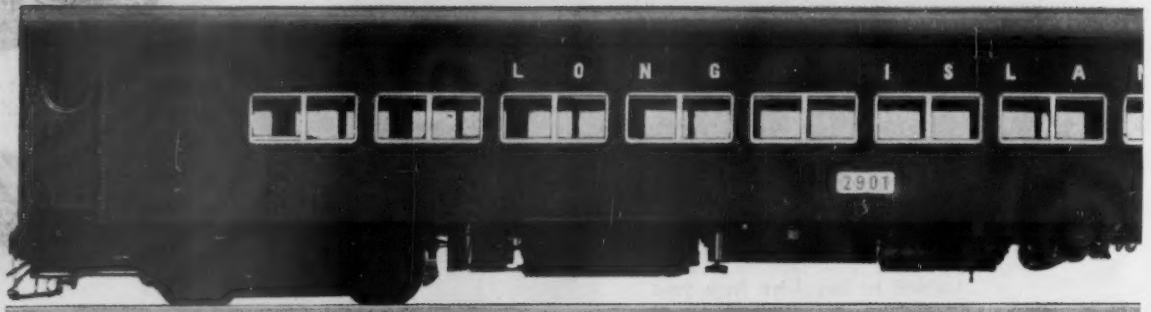
B&O TOFCEE Service offers speedy, worry-free, competitively priced trailer haul and delivery with the dependability proved by Sentinel Service and Time-Saver Service. Try TOFCEE! Ask our man!



Baltimore & Ohio Railroad

Those who know use the B&O!

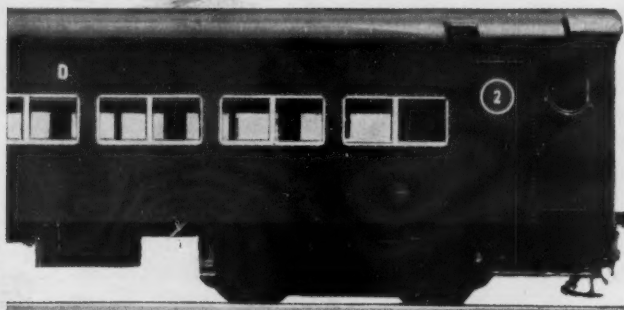
HEYWOOD SEATING IS AN OF THE LONG ISLAND'S



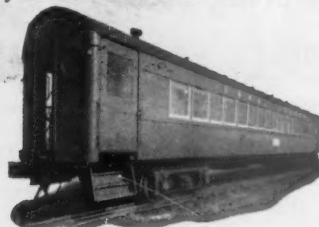
Each week six new air-conditioned passenger cars are placed in service on the Long Island.

IMPORTANT FEATURE

"REDEVELOPMENT" PROGRAM



Running far ahead of all hoped-for schedules, the "Redevelopment" program is rapidly improving service and facilities for Long Island commuters. By April 1956, 222 new air-conditioned passenger cars will be in service. Many of these new coaches, built by Pullman-Standard Manufacturing Company, feature seating by Heywood-Wakefield . . . seating selected for present comfort and performance, for long-run economy and trouble-free service.



Older cars are being rebuilt and modernized at the rate of ten each month. Heywood seating is also being installed in these cars to help give them like-new comfort and "rideability." Whether for new cars or the modernization of older units, your Heywood-Wakefield representative will be happy to give you the details of comfortable, serviceable Heywood seating. Before selecting, be sure you are familiar with Heywood's proven advantages of comfort and economy.



HEYWOOD-WAKEFIELD

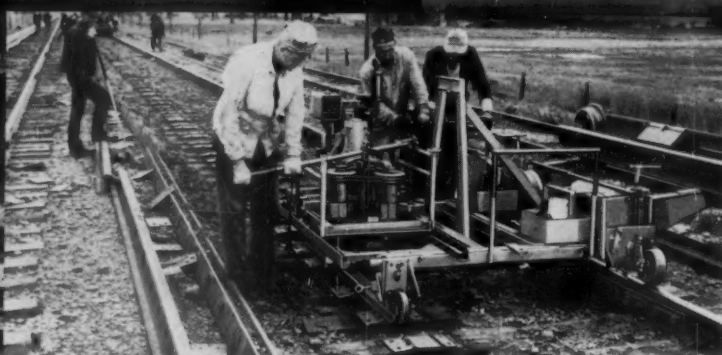
Transportation Seating Division

Gardner, Mass. • Orillia, Ontario, Canada

In Canada: Railway & Power Engineering Corp., Ltd.



CRIBEX® . . . Employing an endless chain of digging flights, the Cribex removes material contained in the cribs and deposits it beyond the ends of the ties. It leaves a smooth and uniformly graded crib floor, completely emptying crib without damage to ties or rails.



DUN-RITE® GAGING MACHINE . . . Fast and accurate, the Dun-Rite base gaging method fastens the tie plates to the tie in exact position so that when the rail is placed the head to head gage is correct.

in 1956 . . .

make your track maintenance dollars
go farther by lowering costs
with **NORDBERG MACHINES**

• For improved track maintenance in 1956 . . . these are the Nordberg "Mechanical Muscles"® you need to do the *best quality job . . . faster . . . at big savings.*

Investigate the full line of Nordberg track maintenance machinery which has been designed, built, fully tested and proved in use with the cooperation of railroad men. These machines have revolutionized track maintenance methods in scores of operations. Write for literature giving complete details on any or all of these "Mechanical Muscles".

© 1955, Nordberg Mfg. Co.

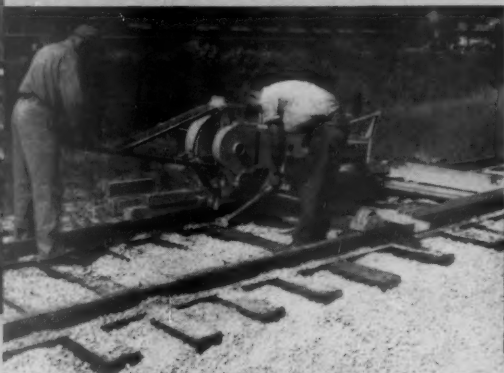
R1355



HYDRAULIC SPIKE PULLER . . . Simple, versatile machine for tie removal, switch and bridge timber jobs—quickly and economically pulls spikes on either rail.



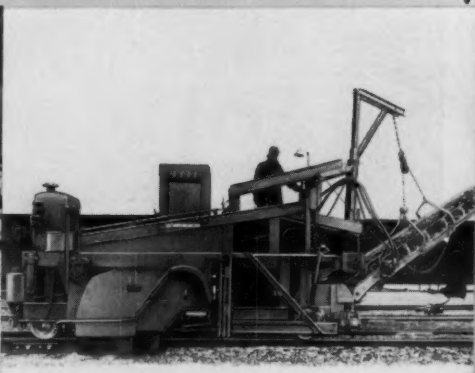
GANDY—TIE PULLER AND INSERTER . . . A multi-purpose self-propelled, on-track machine that pulls old ties—inserts new ties—loads old ties, sets machines on or off track—hauls and distributes new ties.



SPIKE HAMMER . . . A power machine that drives spikes straight and to correct depth. One machine can drive 800 spikes per hour.



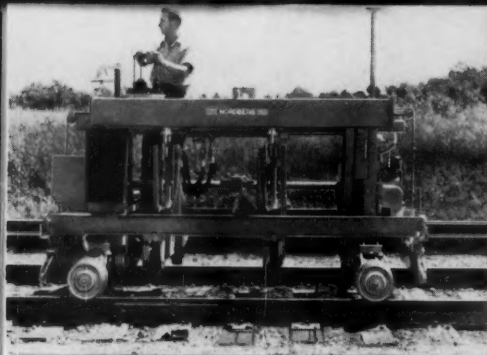
AUTOMATIC GANG TAMPER . . . Operated by one man, this machine assures uniform quality tamping of every tie, every time, in any ballast, whether raising or spot surfacing.



DSL® YARD CLEANER . . . A self-contained, self-propelled machine that cleans more track faster, better, more economically . . . without damaging ties.



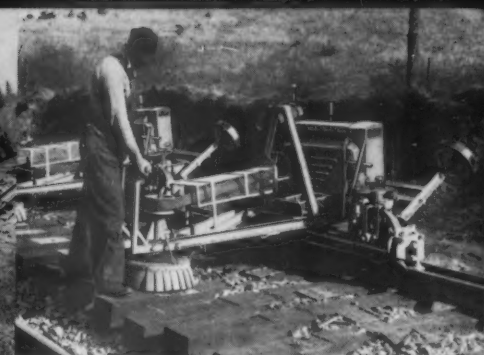
NORDBERG MFG. CO.



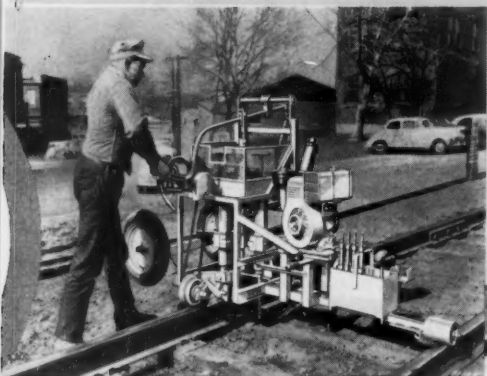
TRAKLINER . . . A self-propelled machine for faster, more accurate track lining in raising, spot surfacing, new work or improvement programs. One man and a machine do the work of 14 men or more.



BALLAST ROUTER . . . Easily and quickly removes high crib ballast, improves track drainage, and simplifies application of rail anchors.



ADZING MACHINE . . . Properly prepares tie seats in keeping with today's track maintenance standards. Adzer is easily operated and adjusted without tools. All tie seats are uniform and in same plane.



TIE DRILL . . . For speeding rail laying, reducing field tie drilling costs and increasing life of ties . . . drills 2 holes at once in less than 3 seconds per hole.



POWER JACK . . . Speed, accuracy and ease of handling on or off the track are advantages of this machine for rebalasting, general surfacing and all other operations involving raising of track.



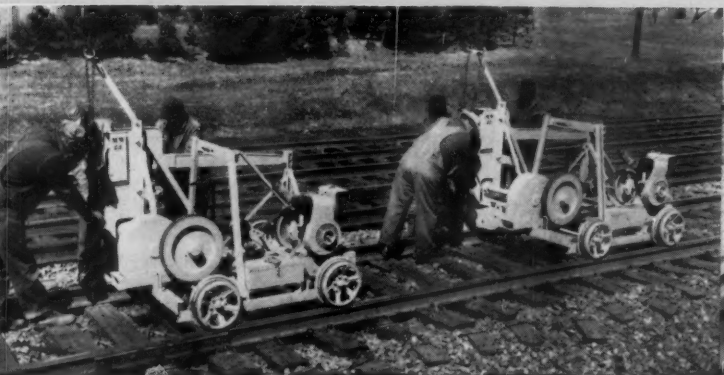
POWER WRENCH . . . Provides uniformly controlled tightening of track bolts. Machine is operated by one man and is ruggedly built to take hard service, yet light in weight to be easily handled off and on the track.



BALLASTEX®—SCREENEX® . . . A fast, economical machine combination that excavates ballast between tracks or on shoulder, cleans and returns it to track, intertrack, or shoulder.



RAIL GRINDERS . . . For reconditioning rail, switches, frogs and crossings, Nordberg builds four types of grinders. In this selection you will find the grinder best suited to your requirements.



MECHANICAL SPIKE PULLER . . . Three men and machine easily pull from 30 to 45 spikes per minute, speeding up relaying and reducing the cost of the entire operation.



RAIL DRILL . . . A compact, lightweight 1½ hp drill that is easily set up and adjusted for accurate work and easily moved from job to job. Self-tightening chuck is simple and the bit is positively held.

Milwaukee, Wis.

NORDBERG

"Mechanical Muscles"®



8,500 TURBINE LOCOMOTIVES

(Continued from page 66)

train-hour shows the new gas turbine holding an advantage over the diesel-electric, according to General Electric spokesmen. The new turbine-electric is designed for more gross ton-miles per freight train-hour at lower operating cost.

Mechanical Features

The two cabs will be road box type cabs. At front and rear the locomotive is equipped with a Type F coupler and M380 rubber draft gear. The two cabs are joined together by Type F couplers but no draft gear. Uncoupling arrangement for these couplers will be locked to prevent accidental separation of the two cabs.

The leading unit contains operator's cab, control, and auxiliary power unit necessary to operate the locomotive.

The trailing cab contains the main power plant which is remotely operated by controls and auxiliary systems located in the leading cab.

The gas turbine is rated 10,700 hp at 1,000 ft elevation and 80 deg F. At the ambient conditions of 6,000 ft elevation and 90 deg F, the power plant will produce 8,500 hp input to the generator for traction which corresponds to 7,000 hp at the rail.

Air brakes will be Schedule 24 RL, single-end equipment, including safety control features. Main reservoir capacity is 160,000 cu in. The two air compressors have three cylinders and two stages. They are intercooled and are rated 202 cfm, 140 psig, at 900 rpm. They are electric motor-driven.

Auxiliary equipment is driven by a diesel engine in the leading cab. This equipment operates continuously during standby, hostling, dynamic braking and power plant running conditions.

(Continued from page 15)

consummate air charter contracts on behalf of air carrier members of each association.

Rates & Fares

AAR's Breithaupt Defends Cabinet Report Rate Plan

Charges that adoption of recommendations of President Eisenhower's Advisory Committee on Transport Policy and Organization would burden shippers of non-competitive, or "rail-bound", traffic and open the door to discrimination in rate-making by railroads were denied last week by Harry J. Breithaupt, Jr., assistant general solicitor of the Association of American Railroads.

Mr. Breithaupt's denials were embodied in addresses he made in Washington before the Transportation Committee of the American Retail Federation, and in New York before the New York Chapter of the National Defense Transportation Association. He attributed the charges to "spokesmen for the trucking industry and other critics" of the Cabinet Committee report.

As to "rail-bound" traffic, Mr. Breithaupt said that what shippers of such commodities "really have reason to fear is that competitive traffic will continue to be drained from the railroads, thus increasing the burden to be borne by the traffic remaining on the rails." For those who assert that publication of lower rates on competitive traffic would make it necessary for non-competitive traffic to absorb the revenue reductions, the AAR attorney had this answer:

"These assertions rest on a completely false premise, namely that lower competitive rates would reduce

rail revenues. The only motive or purpose a railroad would have in publishing reduced competitive rates would be to better its net revenue position by retaining or attracting traffic in greater volume than would otherwise be possible. The competitive rates would be required to be compensatory, and instead of hurting non-competitive traffic, they would benefit it by reducing the share of fixed expenses the non-competitive traffic is called upon to bear."

The "discrimination" charge is "groundless" and "without foundation in fact or law," Mr. Breithaupt said. Explaining that questions of discrimination are questions of rate relationships, he called attention to the fact that the Cabinet Committee's rate proposals would leave the Interstate Commerce Commission with authority to "determine and prescribe such just and reasonable relationship" of rates as might be necessary to remove any violation of the Interstate Commerce Act, including the provisions against discrimination, preference and prejudice.

That arrangement, Mr. Breithaupt added, "would be adequate guarantee of protection against the evils of shipper discrimination envisioned by opponents of the report."

Financial

Boston & Maine.—McGinnis Directorship Application.—The ICC has set back, from November 29 until December 13, the date for resuming hearings in the case involving the application of Patrick B. McGinnis for authority to serve as president and director of this road while continuing as New Haven president. Hearings will be at Boston, before Examiner Homer H. Kirby (*Railway Age*, November 28, page 16).

Chicago, Indianapolis & Louisville.—Name Change.—Stockholders voted at a special meeting November 22, in Monon, Ind., to change the name of the company to Monon Railroad. The change will become effective January 10, the same day the stock trust established by the court following reorganization in 1946 will be dissolved.

Union Pacific.—Stock Split Proposed.—UP directors have proposed a 5-for-1 split of the common and preferred stocks. Par value of both issues would be changed from \$50 to \$10 a share, and each present share exchanged for five new shares. Effective date of proposed split, to be submitted to stockholders' annual meeting next May 8, would be July 2, 1956. Stock now outstanding consists of 4,445,820 common and 1,990,862 preferred shares.

Security Price Averages

	Nov. 20	Prev. Week	Last Year
Average price of 20 representative railway stocks	99.96	95.68	78.52
Average price of 20 representative railway bonds	97.71	97.69	97.25

Dividends Declared

BOSTON & ALBANY.—\$2.25, payable December 30 to holders of record November 30.

CHICAGO SOUTH SHORE & SOUTH BEND.—15¢, quarterly, payable December 15 to holders of record December 5.

ERIE.—37½¢, quarterly, payable December 15 to holders of record December 2.

KANSAS, OKLAHOMA & GULF.—6% preferred A, \$3, semiannual; 6% non-cumulative preferred B, \$3, semiannual; 6% non-cumulative preferred C, \$1; all paid December 1 to holders of record November 19.

PITTSFIELD & NORTH ADAMS.—\$2.50, semiannual, payable January 3, 1956, to holders of record December 16.

READING.—4% second preferred, 50¢, quarterly, payable January 12, 1956, to holders of record December 22.

UNION PACIFIC.—common, \$1.25, quarterly; extra, \$3; both payable January 3, 1956, to holders of record December 5.



Mr. J. E. McLeod, Chief Mechanical Officer, The Chesapeake and Ohio Railway Company reports, "We have developed a practical and economical method for inspection of freight car journals in service under rolling equipment through the active sponsorship of Mr. C. A. Taylor, Vice President, Operations." Mr. McLeod continues, "The Sperry Ultrasonic Reflectoscope has become a major factor in our program for preventing costly and dangerous accidents resulting from defective car axles."



promotes safety and prevents costly damage with **MOBILE ULTRASONIC EQUIPMENT**



The operator drives easily and rapidly from one journal box to another placing the Ultrasonic searching unit on the ends of the journals. Reflectoscope indications are displayed on a cathode ray tube mounted directly in front of the operator.

"Early detection and removal of faulty axles like this can save a railroad hundreds of thousands of dollars," says Mr. McLeod. "This is good evidence as to the effectiveness of the Sperry Ultrasonic Reflectoscope."



A specially designed "railroad journal test car" transports the Reflectoscope and puts the operator within close reach of freight car journal boxes for inspection. This highly efficient method of testing supersedes, and could in fact supersede, the old costly method of removing the axle from the car before conducting the check.



Continuous research in Ultrasonic Testing has developed techniques for inspecting numerous vital railroad components. For example, Sperry can provide you with fast, economic locomotive axle and wheel testing methods. Contact your nearest Sperry office for detailed information on these and other tests. We'll be glad to give you working demonstrations in your shops.



SPERRY RAIL SERVICE

Division of Sperry Products, Inc.
Danbury, Conn.

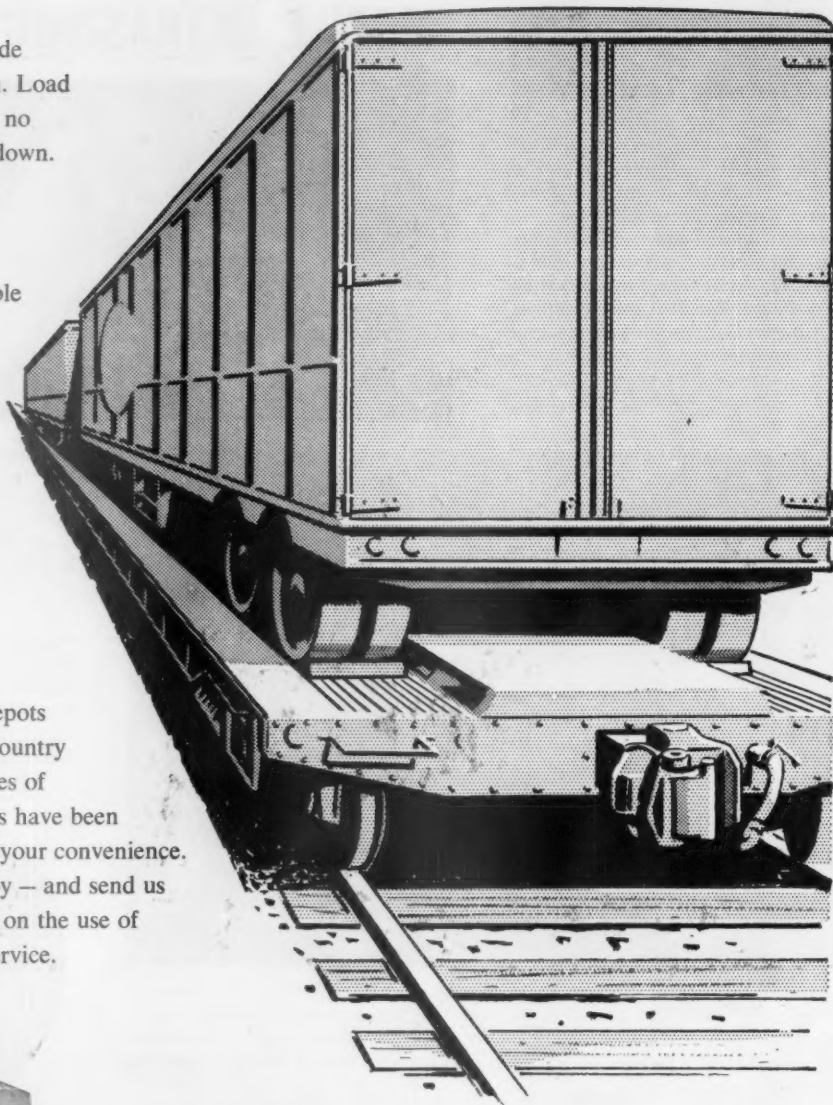
New York Chicago St. Louis

Pureco "DRY-ICE" gives you "cold" protection ... saves enroute inspection!

"DRY-ICE" needs no outside power supply or supervision. Load it — and forget it. There are no mechanical parts to break down. It's unaffected by vibration.

Use "DRY-ICE" in both stationary bunkers or portable units. In tests "DRY-ICE" has produced exactly *controlled* temperatures from ten below zero to 60 degrees F. Its reliable cold protects perishables with maximum efficiency, minimum cost per mile.

A network of 100 Pureco depots are located throughout the country to assure you of fast deliveries of "DRY-ICE". These locations have been listed in a handy booklet for your convenience. Write or call us for your copy — and send us any questions you may have on the use of "DRY-ICE" in Piggyback service.



AT THE FRONTIERS OF PROGRESS YOU'LL FIND . . .



Pure Carbonic Company

NATIONWIDE "DRY-ICE" SERVICE-DISTRIBUTING STATIONS IN PRINCIPAL CITIES

GENERAL OFFICES: 60 EAST 42ND STREET, NEW YORK 17, NEW YORK

PURE CARBONIC COMPANY is a division of AIR REDUCTION COMPANY, INCORPORATED • Principal products of other divisions include: AIRCO — industrial gases, welding and cutting equipment and acetylenic chemicals • OHIO — medical gases and hospital equipment • NATIONAL CARBIDE — pipeline acetylene and calcium carbide • COLTON — polyvinyl acetates, alcohols and other synthetic resins.

NIPS UP THE TIE AGAINST THE RAILS

...Drives four spikes!



RMC SPIKE Master

With an operating speed of better than two ties per minute, SpikeMaster drives four spikes—one on either side of both rails.

Machine is suitable for tie replacement or laying new rails. It is adjustable for driving either rail or anchor spikes on all tie plates. It can be used with pre-bored or non-bored ties. A hydraulic ram turntable enables operator to lift the machine, turn it and remove it from track.

Ask for Bulletin S-55

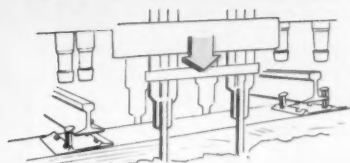
Railway Maintenance Corporation

Box 1888

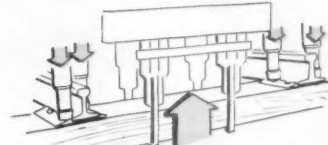
Pittsburgh 30, Pa.

Designers and manufacturers of:

McWilliams Mole, Super Mole . . . McWilliams Tie Tamper, Crib Cleaner,
Ballast Distributor . . . TieMaster . . . LineMaster . . . SpikeMaster



Nipping tongs are lowered to engage tie and raise it square with the rails.

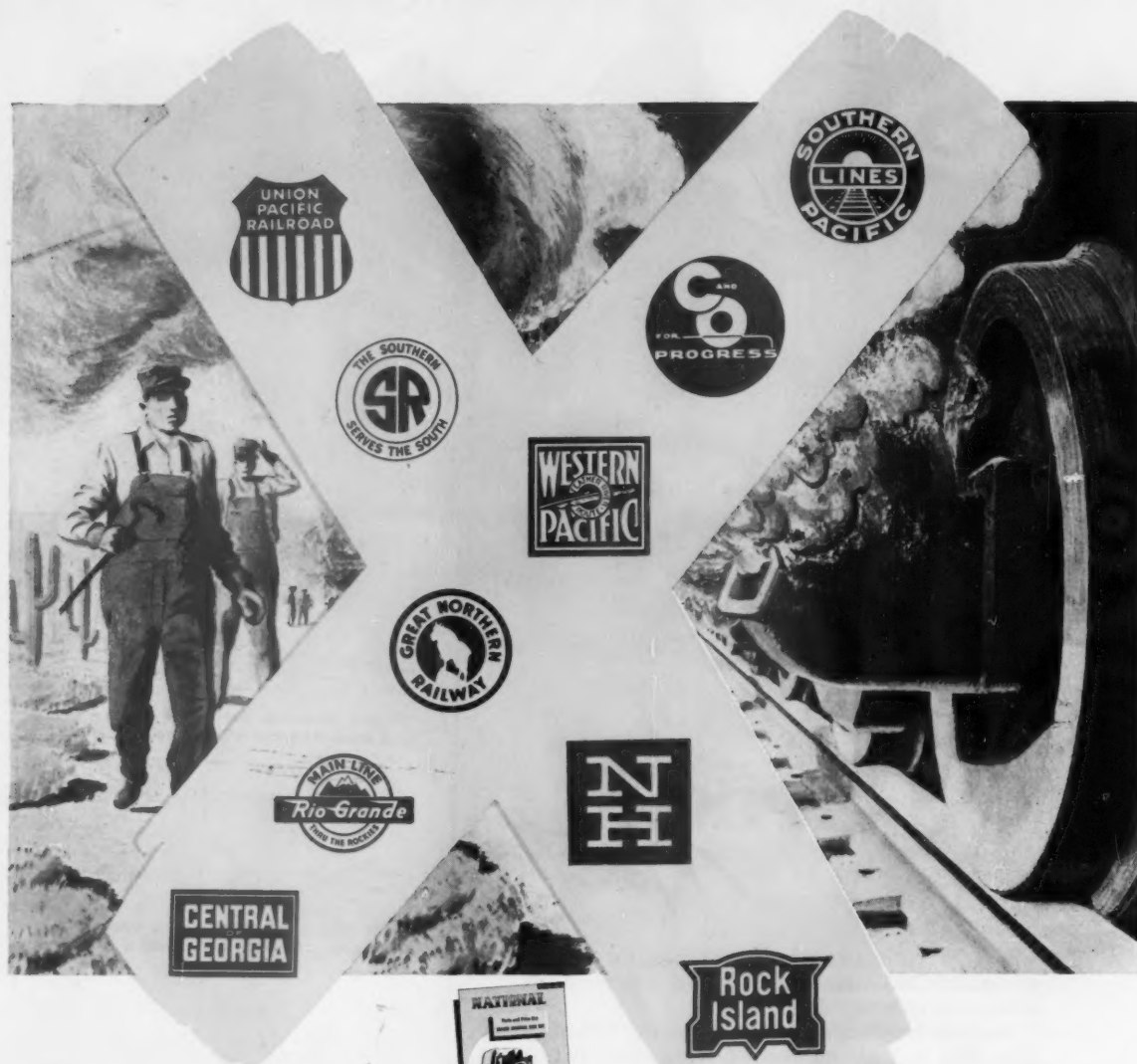


With tongs holding tie, driving guns drive spikes on either side of both rails.

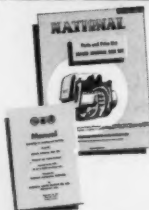


Machine with one set of driving guns operating, the other in travel position. Both sets of guns operate simultaneously if desired.

Simple, Permanent,



WRITE TODAY for manual describing simple, inexpensive installation steps and **PARTS & PRICE LIST** showing parts, quantity purchase prices. Sent immediately; no obligation.



For complete information or consultation at your headquarters, write or telephone nearest NMB Railway Equipment Division Office.

New York 17, New York • Room 537 • 527 Lexington Avenue • Plaza 3-6647
 Chicago 4, Illinois • Room 462 McCormick Bldg. • 332 S. Michigan Avenue • HArrison 7-5163
 Redwood City, California • Broadway at National Avenue • EMerson 6-3861

CANADIAN DISTRIBUTOR

The Robert Mitchell Company, Ltd., 64 Decarie Blvd., St. Laurent, Montreal 9, Quebec

NATIONAL MOTOR BEARING CO., INC.

GENERAL OFFICES: Redwood City, California

PLANTS: Redwood City, Downey and Long Beach, California • Van Wert, Ohio



NMB has manufactured tens of thousands of oil seals for roller bearing cars and over 1,000,000,000 oil seals for AUTOMOBILES • TRUCKS • TRACTORS • AIRCRAFT • MACHINES • HOUSEHOLD APPLIANCES

Economic Answer to Hot Boxes

Alert officials on these and other railroads are proving the
NMB JOURNAL BOX LUBRICATING SYSTEM*
is the practical solution!

PROVE IT YOURSELF—MAKE THIS TEST

Equip 10 test cars with the NMB System. Prove conclusively to yourself that the NMB System is the practical solution to hot boxes.

Operate under your most unfavorable conditions. Bearing end wear will be cut to an unbelievable 0.0006" per 1,000 car miles. Inspection will be required only once a month. Oil consumption will drop to about 1 oz. per 1,000 journal box miles. Hot boxes will be virtually eliminated!

The NMB Sealed Journal Box Lubricating System can achieve these results because it provides *positive* sealed oil bath lubrication of bearings at all speeds, while

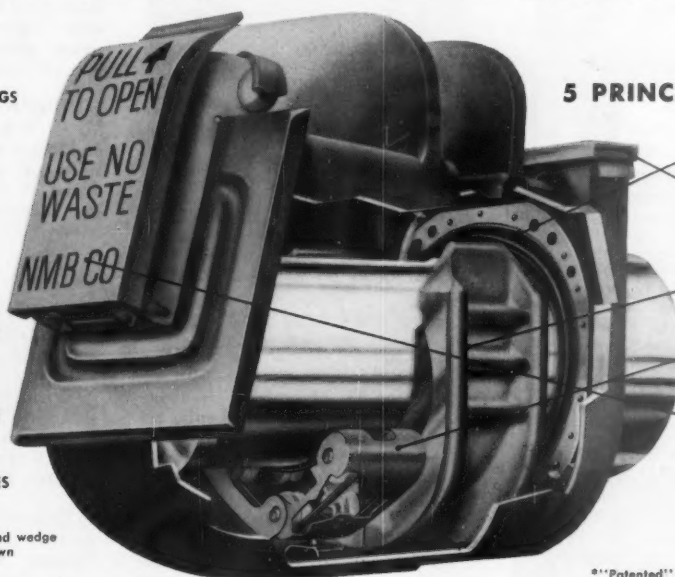
thoroughly excluding foreign matter from the journal box.

The exclusive NMB Oil Circulator lubricates bearings with $\frac{1}{2}$ turn of the axle and causes bearings to run 50° cooler. The rear oil seal and leak-proof lid retain oil while excluding dirt, water, brine and snow. Journal guard bearings prevent impact damage to journals during humping, coupling, starting or heavy braking.

Installation is made in standard A.A.R. journal boxes. NMB Systems for 5" x 9", 5½" x 10" and 6" x 11" journal boxes can be shipped promptly.

- USES "LONG" SOLID BEARINGS
- QUICKLY INSTALLED WITHOUT ALTERATION
- ELIMINATES ALL HOT BOXES DUE TO INADEQUATE LUBRICATION
- REDUCES OIL CONSUMPTION 90 %
- REDUCES INSPECTION TIME 90 %
- VIRTUALLY ELIMINATES BRASS END WEAR, WEDGE AND BOX TOP WEAR
- RUNNING TEMPERATURES AVERAGE 50° COOLER UNDER FULL LOAD AT 60 MPH
- ELIMINATES VIRTUALLY ALL ACCIDENTS DUE TO HOT BOXES

Brass and wedge not shown



5 PRINCIPAL PARTS

- A. OIL SEAL
- B. DUST GUARD WELL COVER AND FILTER
- C. JOURNAL GUARD BEARINGS
- D. FREE-OIL CIRCULATOR
- E. JOURNAL BOX LID AND WAFFLE GASKET

*"Patented" and "Patents Pending" 3570

The BEST for YOUR PLATFORMS



STANDARD
EXPRESS • BAGGAGE • MAIL
TRUCKS

★ SMARTLY MODERN

★ STAMINA CONSTRUCTED

★ FREE ROLLING—QUIET

MORE—these finer platform conveyances have been service tested in scores of America's outstanding terminals and stations—a new and higher standard for YOUR CONSIDERATION.

TRACTOR DRAWN EXPRESS TRUCKS



Superbly engineered for many-year duty. Pneumatic tired, roller bearing, safety brake, patented hitch, streamlined with color to match trains, 6000 lbs. capacity, weight 1050 lbs.

BAGGAGE and MAIL CARTS*

TRACTOR DRAWN

Same features as Express Trucks above including Timken bearing fifth wheel and only six points to grease. Capacity 5,000 lbs., weight 756 lbs.



HAND DRAWN



Mounted on 28" x 4" solid rubber tires. Longer tongue than tractor drawn units. All features of tractor drawn units except no rear towing hitch. Capacity 4,000 lbs., weight 750 lbs.

* Conform to the recommendations of the Committee on Baggage, Express and Railroad Mail of the A. A. R.

Write for Bulletin 109-BR

FRENCH & HECHT
DIVISION

KELSEY-HAYES WHEEL COMPANY
DAVENPORT, IOWA

Railway Officers

CAROLINA & NORTHWESTERN.—Edward A. Gill, division engineer of the Southern at Greenville, S.C., has been appointed engineer maintenance of way of the Carolina & Northwestern at Charlotte, N.C.

CHICAGO & NORTH WESTERN.—Thomas L. Norton, general traffic manager, has been elected vice-president in charge of traffic, succeeding R. O. Small, whose retirement was announced in *Railway Age*, August 8. Mr. Small has been retained after his retirement to act as executive consultant—rates and divisions. Robert C. Stubbs, assistant general freight traffic manager, has been appointed assistant vice-president—traffic, and Geoffrey M. Bruere, assistant to vice-president of operation,



CHICAGO & EASTERN ILLINOIS.—W. R. Hill, trainmaster, who has been appointed superintendent at Danville, Ill. (*Railway Age*, November 7, page 41).



Thomas L. Norton



Robert C. Stubbs

has been named assistant to executive vice-president.

Sylvester A. Keathley has become general agent at St. Louis, replacing E. C. Crow, retired. H. B. Smith has been appointed district passenger agent at Omaha, and Albert P. Ruotsala, geologist at Rapid City, S.D.

J. L. Perrier has returned to his duties as division engineer, Wisconsin division at Chicago. J. A. Barnes

and R. W. Bailey have been appointed division engineers, Madison division at Madison, Wis., and Dakota division at Huron, S.D., respectively.

DELAWARE & HUDSON.—E. G. Young has been appointed assistant manager of personnel at Albany, N.Y.

ERIE.—Effective December 1, the Springfield and Dayton, Ohio, agencies were consolidated and hereafter will be designated as the Dayton—Springfield agency, located at 25 South Main Building, Dayton 2, Ohio. Carl P. Underwood, general agent at Springfield, has been appointed division freight agent at Dayton, succeeding the late Fred W. Fischer (*Railway Age*, November 21, page 54).

NASHVILLE, CHATTANOOGA & ST. LOUIS.—J. C. Aker, chief engineer at Nashville, Tenn., retired November 16 after 44 years of service with this road. J. L. Fergus, assistant chief engineer, has been appointed acting chief engineer.

PIEDMONT & NORTHERN.—M. C. Watt has been appointed general agent at Anderson, S.C. The position of district freight agent at Anderson, formerly held by Mr. Watt, has been abolished.

OBITUARY

John J. Morper, 33, an auditor for the Chicago & North Western, died November 21 at Chicago.

William A. Pownall, former assistant to general superintendent motive power of the Wabash, died at the Wabash Employees' Hospital, Decatur, Ill., November 25.

Orlando H. Frick, retired general manager of the Chicago Union Station Company, died November 24 at Wauwatosa, Wis.

Current Publications

PERIODICAL ARTICLES

REVOLUTION ON RAILS. Newsweek, November 21, 1955, pp.89-94. Weekly Publications, Inc., Broadway and 42nd st., New York 36. Single copies, 20¢

During the past 10 years railroads have rebuilt their lines, their organizations, their finances. Despite new and powerful competition—from trucks, barges, pipelines, air fleets—railroads today not only are holding their own but are fighting harder and more effectively than ever to improve and increase their payloads. In a Business Special Report, Newsweek's associate editor John A. Conway reports on this railroad revolution.

ANNUALS

AMERICAN TRUCKING TRENDS. 29 pages. American Trucking Associations, Inc., 1424 Sixteenth st., N.W., Washington 6, D.C. Free.

STATISTICS OF CLASS I MOTOR CARRIERS FOR THE YEAR ENDED DECEMBER 31, 1953. 85 pages. Prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Available from Government Printing Office, Washington 25, D.C. \$1.

ACCIDENTS FACTS, 1955 Edition. 96 pages. National Safety Council, 425 N. Michigan ave., Chicago 11. 75 cents.

AUTOMOBILE FACTS AND FIGURES, 35th Edition, 1955. 80 pages. Automobile Manufacturers Association, New Center bldg., Detroit 2. Free.

THE THIRTY-SECOND ANNUAL GREEN BOOK. Report on the 28th Railroad Employees' National Safety Award, Class I Railroads, Year 1954. 12 pages. National Safety Council, 425 N. Michigan ave., Chicago 11. Free.

STATISTICS OF RAILWAYS OF CLASS I, UNITED STATES, CALENDAR YEARS 1946-1954. 15 pages. Association of American Railroads, Bureau of Railway Economics, Transportation bldg., Washington 6, D.C. Free.

ACCIDENT BULLETIN, No. 123. Summary on Analysis of Accidents on Steam Railways in the United States Subject to the Interstate Commerce Act, Calendar Year 1954. 95 pages.

Prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Available from the Government Printing Office, Washington 25, D.C. 70¢.

BOOKS

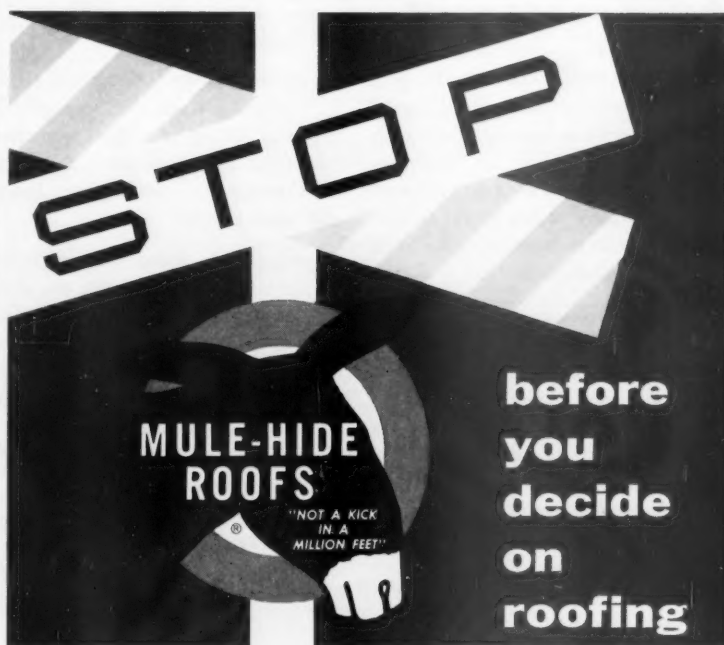
THE BIG IVY, by James McCague. 312 pages. Crown Publishers, Inc., 419 Fourth ave., New York 16. \$3.50.

A novel about railroad men and women in a great era of American railroading—the turn of the century. It's an exciting story filled with the drama of record runs, wrecks, rivalries and the constant contest against time and the weather. Mr. McCague

says "I've approached this book from the standpoint of the plain, shirt-sleeve American who worked on the railroad, who actually made the trains run . . . his ambitions, his problems, what made him tick."

COMMERCIAL MOTOR TRANSPORTATION, by Charles A. Taff. Revised edition, 673 pages, illustrations. Richard D. Irwin, Inc., Homewood, Ill. \$6.

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CONSOLIDATED CURRENT INDEX TO I.C.C. DECISIONS, 1955 Edition. 862 pages. Association of Interstate Commerce Commission Practitioners, 2218 ICC Building, Washington 25, D.C. \$15.

A compilation of the Index to ICC decisions which appeared monthly in the ICC Practitioners' Journal from January 1951 through January 1955. The more than 6,000 decisions necessitated refined analysis of the material into nine chapters, each containing from 7 to 10 topics further sub-divided into sections and sub-sections. Each topic, section and sub-section and many individual paragraphs are indexed in the Key Word Index with respect to principles, commodities, type of carrier, location, etc. All decisions digested are listed alphabetically in the Table of Cases. Decisions, which in the judgment of the editors were significant only with respect to ultimate disposition of an application, are arranged alphabetically in the Table of Cases Showing Disposition of Applications.

TRADE PUBLICATIONS

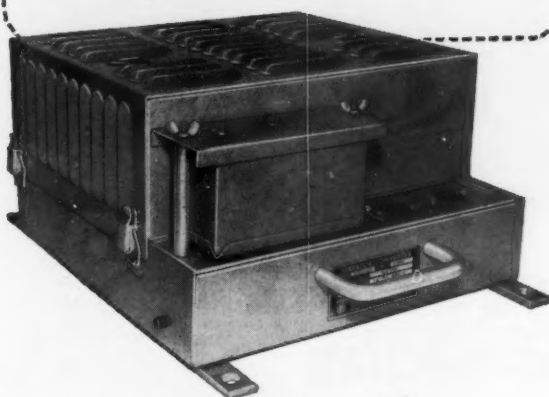
A REPORT ON ALCOA ALUMINUM IN THE RAILROAD INDUSTRY! 8 pages, illustrations. Aluminum Company of America, 2180-F Alcoa bldg., Mellon Square, Pittsburgh 19. Free.

Reviews some uses railroads have made of aluminum.

GRS ALL-RELAY INTERLOCKING SYSTEMS. Bulletin 188, 39 pages, illustrations, charts. General Railway Signal Company, Rochester 2, N.Y. Free.

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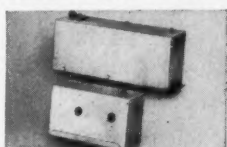


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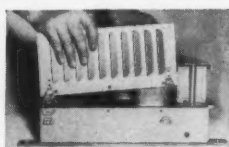
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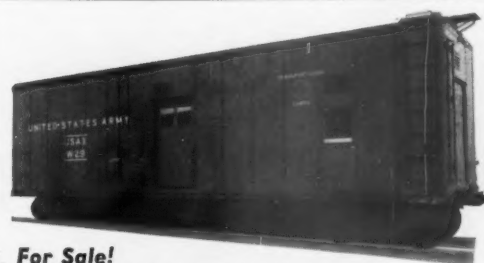
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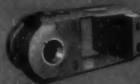
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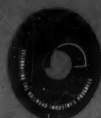
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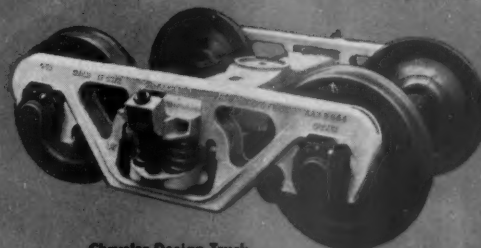
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